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# THE SUGAR BULLETIN

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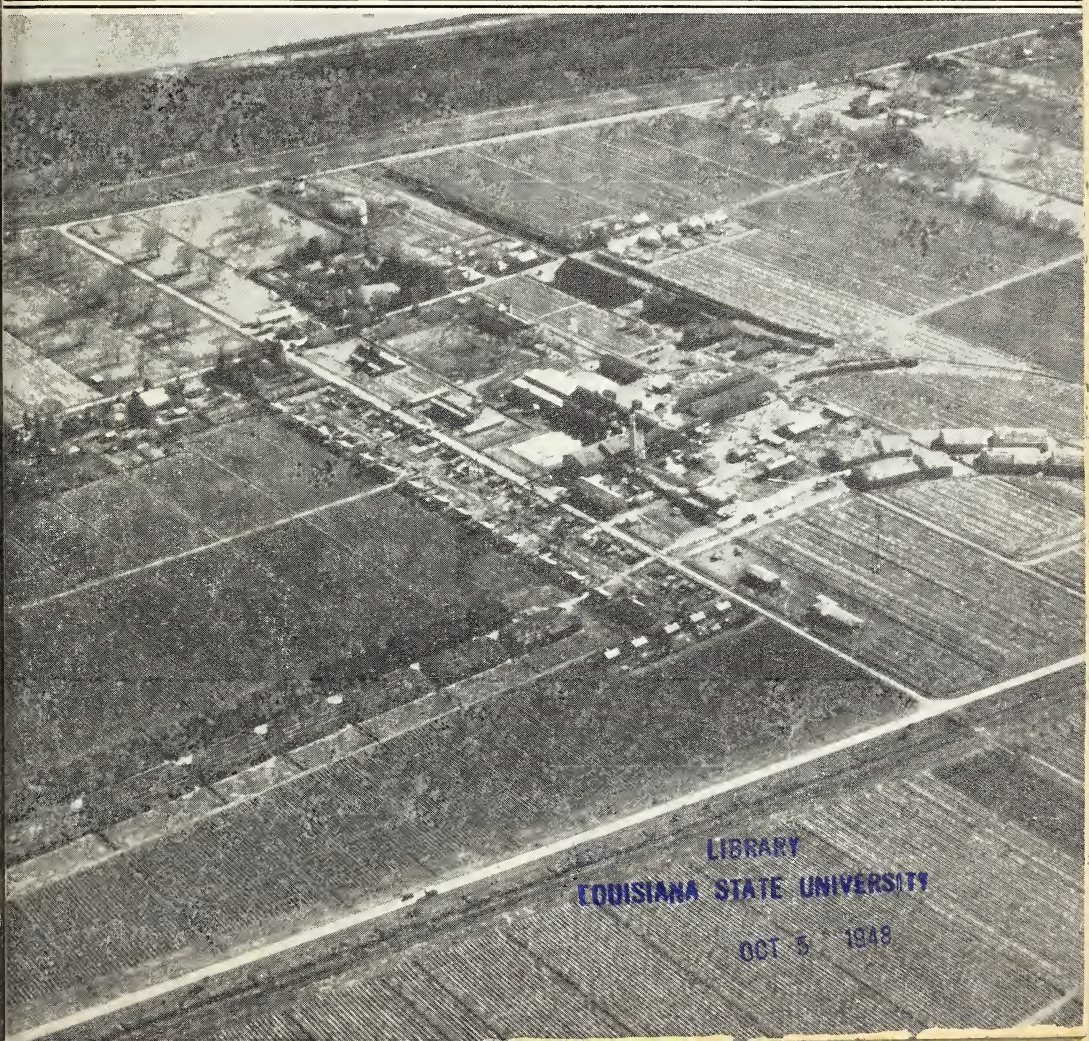

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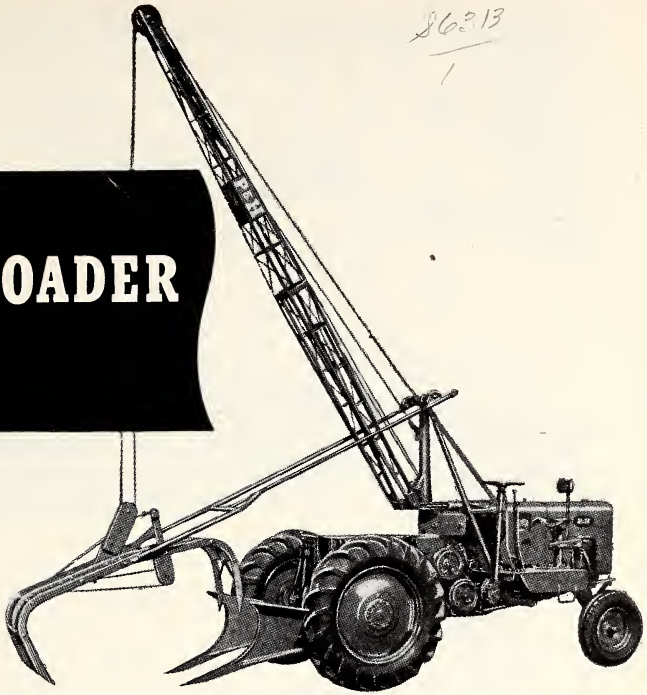

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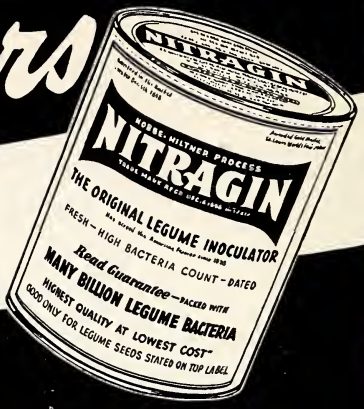
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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

**The Official Organ of the American Sugar Cane League of the U. S. A.**

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# ANNUAL ADDRESS OF PRESIDENT MURPHY J. FORTER

*Delivered at the 26th Annual Meeting of the American Sugar Cane League of the U. S. A., Inc., September 30th, 1948*

Gentlemen: I wish to thank each and every member present today, many of whom have left their cane planting in the fields or repair work at their factories, to sit together with visitors and members of the press to make this our 26th Annual Meeting a success.

During the early months of my administration, the principal concern of the Louisiana sugar industry was with regard to the effect of two very important pieces of legislation which had been adopted earlier in 1947, namely: the decontrol of sugar price ceilings on October 31, 1947, and the Sugar Act extension for five years. The date of October 31st advocated by Louisiana as proper and safe for decontrol arrived and passed without disturbing incidents. In fact, the progressive elimination of Government controls over rationing and price was handled in an efficient manner so that the transition from war regulations was accomplished, with reference to sugar, smoothly and with a minimum of disturbance. This contrasted greatly with the sad experience encountered by those who were engaged in the sugar business immediately following World War I. The prices which existed on October 31st were maintained into January, and as a result, the growers were protected on the price for sugarcane and the processors were protected on the price of sugar during the normal marketing season for the entire Louisiana 1947 crop.

The Sugar Act gave to the Mainland Cane Area an increased quota of 500,000 tons, which has assured our producers of a ready and free market without any restrictions as to production or marketing during 1948. There have been serious fluctuations during the first half of 1948 in sugar prices and especially in raw sugar. Admittedly, the first consumption estimate of 7,800,000 tons made in January was excessive, but we were able, in cooperation with other domestic producing areas, to present to the Secretary of Agriculture facts and statistics upon which he could justify a gradual reduction of the quotas first to 7,500,000 tons and then to 7,000,000 tons.

I cannot but feel much concern over the present price of sugar. If full consideration was given to that section of the 1948 Sugar Act which refers to the relationship between prices at wholesale for refined sugar and the general cost of living index the Wholesale Price of Refined Cane Sugar at New York including tax before the 2% discount should be 9.081 cents per pound instead of 7.70. The price of raw sugar, in which every sugarcane producer is interested should be 6.94 cents per pound instead of the present market of 5.60 cents per pound.

This is only part of the story since in the above calculations we assume that the sugar market during 1947 was equitable.

But the beet producers of a northern state, using the official crop reports of their state and of the Government, have made comparisons of the price-wise status of sugar beets and eight competing crops. On an average, the gross acre value of the eight crops, has increased 328.18 percent over the 1936-1940 average value. On this basis sugarcane which averaged $3.788 per ton should now be worth $12.43 per ton. The estimated value of a ton of sugarcane for this crop is approximately $7.49. Sugar beets and sugarcane should benefit equally with competing crops by the general rise in price levels. Is it any wonder that we meet general dissatisfaction among sugarcane farmers?

I think I should also express my concern over the present molasses situ-

(Continued on page 429)

# CANE PRODUCTS TRADE ASSOCIATION ADOPTS NEW RULES GOVERNING RAW SUGAR QUOTATIONS

The Cane Products Trade Association, Inc., has announced that its Raw Sugar Quotation Committee will be guided by a revised set of rules this season in arriving at daily and weekly average raw sugar prices.

The Association, through its President, Mr. George L. Billeaud, of Broussard, La., has requested the American Sugar Cane League to advise the Louisiana sugar industry of the rule changes and we take pleasure in doing so in this issue of *The Sugar Bulletin*. The new rules and other explanatory letters and telegrams are printed below.

September 23, 1948

Mr. Marcel J. Voorhies, Gen. Mgr.
American Sugar Cane League
414 Whitney Bank Building
New Orleans 12, Louisiana

Dear Marcel:

I am enclosing herein a copy of a new set of rules that will be used by the Raw Sugar Quotation Committee of the Cane Products Trade Association in quoting daily and weekly average raw sugar prices together with a letter from Mr. R. M. Murphy to Mr. Joseph T. Elvove, of the Sugar Branch, which is self-explanatory.

Enclosed also is a copy of a wire received by our Association from Mr. Lawrence Myers, Chief of the Sugar Branch, of the Production and Marketing Administration, together with our answer.

Certain changes in our rules have been made necessary because of the increasing tendency of the Louisiana sugar producers to sell their raw sugar production under average price contracts, thereby greatly reducing the possibility of spot sales of Louisiana raw sugar, and our Raw Sugar Quotation Committee has adopted these rules after a careful study of the many problems involved. We feel that they will result in a more accurate reflection of the true value of sugar in Louisiana.

Your cooperation in advising the Louisiana sugar industry of the Committee's efforts will be greatly appreciated.

Yours very truly,
George L. Billeaud,
President

—o—

September 10, 1948

Mr. Joseph T. Elvove,
Acting Director,
U. S. Department of Agriculture,
Production and Marketing
Administration,
Sugar Branch,
Washington 25, D. C.

Dear Mr. Elvove:

Reference is made to your letter of August 20th, 1948.

Enclosed herewith please find amended rules which will govern the determination of the Raw Sugar Quotation Committee of the Cane Products Trade Association, Inc., beginning with season 1948-1949.

Please note that we will use the "New York daily average spot quotations of Willett & Gray, Inc., adjusted to a delivered New Orleans basis" on such day, or days, as there are no sales of Louisiana raw sugar made to New Orleans refiners. We prefer to use Willett & Gray, Inc. spot quotations properly adjusted to New Orleans basis rather than any other New York quotations because (1) Willett & Gray, Inc., quotations are based on actual sales of spot raws on a New York basis to refiners. (2) Willett & Gray, Inc., quotations ignore sales to operators, etc., as do practically all refiners, (3) Willett & Gray, Inc., quotations have proven satisfactory to the Louisiana Sugar Industry over several decades and are well and favorably known to our New Orleans refiners, the Louisiana processors, and many, if not all, of the Louisiana cane growers.

The New York daily average spot quotation will be adjusted to a New Orleans basis for the reason that the ocean freight rate from many offshore

(Continued on page 428)

# CONTROLLING JOHNSON GRASS WITH SHEEP

*By Clarence George, Agricultural Editor,*
*Louisiana Agricultural Experiment Station*

Folks were surprised, not to say a bit skeptical, when the Wilkinsons at Poplar Grove Plantation near Port Allen in West Baton Rouge Parish put sheep in a field of sugar cane last spring and told curious observers they were trying to control Johnson grass with the animals. But the results they have already obtained have convinced many they may have hit upon a very practicable way of whipping this pesky grass that costs Louisiana cane growers hundreds of thousands of dollars a year in extra labor and millions of dollars in reduced yields.

The sheep haven't bothered the cane but they've done a superb job of keeping down Johnson grass in a field where they were placed before the growth of the grass had become tough and fibrous. Moreover, they're not only saving labor and probably increasing cane yields but are producing another crop—wool or mutton—at the same time.

"What made us try sheep in the sugar cane?" echoes Horace Wilkinson, III, vice-president of Poplar Grove Planting and Refining Co. and manager of field operations on the plantation. "Shortage of labor. It takes labor to fight Johnson grass in sugar cane and we just didn't have enough of it. Why, we had to abandon one 40-acre field of first-year stubble cane this year because of Johnson grass. We didn't have the hoe hands to keep it down.

"We had heard that the late Mr. A. R. Wurtele up in Pointe Coupee Parish had tried grazing sheep on Johnson grass in sugar cane fields a few years ago, but we didn't know just how it had turned out. When we saw how short labor was going to be this year we decided we'd try a few sheep in sugar cane, on a small scale.

"We had a 38-acre field of cane that was planted last fall on land that had been fallow plowed last summer after being in pasture for four years. This cane had been hoed once and the ditchbanks in the field mowed once early in the season but the Johnson grass was coming up again.

"The field already had a barbed-wire fence around it so we stretched a hog wire fence at the bottom and put 25 head of sheep in the field in May when the cane was laid by. They did a fairly good job of keeping down the Johnson grass but when it looked like the grass might get out of control we added 15 more head. That was when the cane was about 5 feet high. It gave us 40 head on the 38 acres, or about one per acre. There's the field—and you can see the result."

The "result" is that the field is practically bare of Johnson grass. Ditchbanks and headlands, which under normal operation would have had a fairly dense growth of the grass four to five feet high and producing seed to reinfest the field next year, in September were cleaner than if they had been mowed every week. Cane growers and agricultural workers who visited the farm on a recent field day were amazed at the absence of the grass and weeds.

"None of the growers called me a liar—to my face, that is—when I told them that the cane had had only one hoeing and the ditchbanks only one mowing," Mr. Wilkinson laughingly recalls. "But the look they gave me said as much."

He pointed to another field of cane that was planted at the same time on land that had been in pasture the previous four years, but has had no sheep in it.

"That field," he said, "was also fallow plowed last summer. It has been hoed three times this year, field hands sent over it another time with cane knives to cut out the Johnson grass growing in the cane drill, and the ditchbanks and headlands mowed twice and burned once. And it still has enough

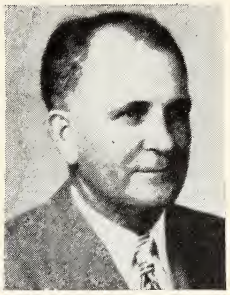
(Continued on page 426)

# YOUR COUNTY AGENT REPORTS

## Iberia Parish Crop Reports as of September 22nd

*by*

*W. E. Williams, County Agent*
*Iberia Parish, Louisiana*



MR. WILLIAMS

Recent rains have been beneficial to the sugarcane crop in Iberia Parish. Heavy winds accompanying the rains blew quite a bit of sugarcane over. However, it has straightened up.

With favorable weather conditions from now until the beginning of harvest, sugarcane should make a rapid growth. This will increase tonnage prospects for the parish farmers.

At the present time indications are that the yield will be around 15 to 17 tons per acre.

Contrary to previous estimates the sugarcane acreage of the parish is estimated to be 3000 under the 1947 crop. In that year there were approximately 39,300 acres devoted to cane. At present it seems as though this year's crop will barely exceed 36,000 acres.

Sugarcane planting is in full swing in Iberia Parish at the present time.

Farmers practically outdid themselves this year in the production of corn even though the season was not considered most favorable for this crop. Most farmers have produced enough corn to take care of their needs and have some surplus to put on the market. Due to shortage of storage place on the farms a number of farmers had to sacrifice corn at prices below market price. There is still quite a bit of surplus corn on hand on Iberia Parish farms.

For the first time in the history of Iberia Parish, in-so-far as official records are concerned, over 90 bushels of corn per acre were produced in a result demonstration this year. Mr. Zenon Boutte of the Loreauville section produced 93 bushels per acre using Louisiana Hybrid 521. His check plot in which open pollinated corn was used yielded only 71 bushels per acre. Both plots were cultivated and fertilized in exactly the same manner.

A lot of farmers are turning their attention to livestock farming and developing good pastures for grazing purposes. Over 9 carloads of 20% superphosphate were purchased by farmers this fall for pasture development and winter cover crops.

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# DISPLACED PERSONS

The time of entry for Displaced Persons from European refugee camps intended for the New Orleans area will hardly be before the latter part of January, 1949, or early February, it was revealed this week by Rt. Rev. Msgr. W. J. Castel, director for the Catholic DP program in the Archdiocese of New Orleans. The statement was made after a meeting of directors from Louisiana and Mississippi with program officials from the New York headquarters at The Roosevelt.

Some movement of DPs will take place in late October, he explained, but these are intended for the New York area, to help train personnel who will

(Continued on next page)

## DISPLACED PERSONS

(Continued from page 425)

be employed later at other ports of entry, including New Orleans, when the movement gets into full swing. The delay has been occasioned by the mass of preparations required, including arrangements with IRO and the U. S. Military Government, setting up of necessary machinery, security screening by Army Intelligence and health examinations.

If these DPs do not arrive in time for the cane harvest, Monsignor Castel explained, they will be available for the planting season. Two priests, he stated, who recently made a tour of the DP camps in Europe, told the meeting here last week that they found these refugees eager to come to this country, and gave all indications of making first rate American citizens. They are most indutrious people, they stated, and apparently have many farmers among them, besides skilled workers.

## ADDED FERTILIZER SOURCE

Outright ownership of the wartime-built and government-financed ammonia plant, leased to Mathieson Chemical Corporation at Lake Charles, has passed into the controlling hands of that company following a deal involving a purchase price of $7,063,000. Thus Louisiana is insured continuation of the operation of the plant vitally important to the state's fertilizer industry. Under the purchase agreement, a Lake Charles dispatch reveals, the Mathieson company will be credited with $1,655,400 for capital expenditures under a rehabilitation agreement with the government.

The Lake Charles plant, which originally cost the government $13,566,850 and covers 11 acres, was a part of the wartime ordance explosives program and was one of 10 similar plants constructed at various points throughout the country. It was built by the Reconstruction Finance Corporation and has been operated since the war period by the Mathieson people under lease. The product manufactured is anhydrous ammonia which is currently going largely into fertilizer materials although shipped during the war to other points for conversion to nitric acid for explosives manufacture.

Lake Charles is regarded as a strategic point for fertilizer manufacture since natural gas is used as a source of hydrogen in the making of ammonia, an official of the company announced. It is an area where large amounts of fertilizers are also consumed and is well located to meet foreign needs because of the deep water port facilities, he said. The company official also said that the Mathieson corporation plans to expand its operations so as to manufacture other ammonium derivatives.

According to advice from Washington, the plant was sold with the understanding that the military establishment would have first call on products in case of an emergency. Another condition of the sale, it was reported in dispatches, requires the operating corporation to maintain the nitric acid oxidation and the ammonium nitrate solution equipment in good working order during the five years the purchaser is completing payment on the plant.

## JOHNSON GRASS

(Continued from page 424)

Johnson grass to produce a greater infestation next year."

Mr. Wilkinson believes that the sheep have more than paid for themselves in the labor they saved in the first year. He paid around six dollars a head for them, grazed them at the rate of about one head per acre, and figures they saved at least two hoeings—which alone would represent about six dollars worth of labor per acre—in addition to one or two mowings of ditchbands and headlands. They also saved the laborious operation of cutting out Johnson grass in the cane drill with cane knives. And there is the probability that slightly greater yields of cane may be obtained this year from the better control of the grass in the cane drill.

The biggest benefit, though, is expected to come next year because Johnson grass is usually far more severe in first-year stubble cane than in plant

cane. Since the sheep have prevented the grass from producing seed this year, the infestation of Johnson grass in the field should be relatively light next year. Authorities have pointed out that on many Louisiana sugar cane farms where infestation of the grass is severe it is not unusual for the yield to decline from 25 to 30 tons of cane per acre from plant cane to 10 to 15 tons in the first-year stubble, most of this decline being due to the heavier growth of Johnson grass.

"Another advantage we believe a field of cane as clean as this one will offer," Mr. Wilkinson says, "is that it gives us a source of good clean seed cane. We know that if we cut seed cane from a field severely infested with Johnson grass we are sure to spread a lot of the grass seed to the new field where we plant the cane. But if we have land fairly free of the grass and plant there seed cane taken from a clean field, we shouldn't have so much trouble from the grass."

Still another advantage of having cane free of Johnson grass, he believes, is that the recovery of sugar per ton of cane is not lowered. He points out that a considerable amount of dried Johnson grass goes through the mill with cane cut from a field severely infested with the pest and that this dried grass absorbs some of the juice from the crushed cane, thereby reducing the yield of sugar.

Chauvin Wilkinson, secretary-treasurer of the Poplar Grove company and a brother of Horace III, has been assisting with management of the sheep. Their father, Horace Wilkinson, Jr. widely known throughout the sugar industry, is president and general manager of the company.

Results with the first batch of sheep were so promising in the first two months that the Wilkinsons began looking for more of them. They bought another 164 head in late July and early August and put them in a field of 130 acres of plant cane already fenced where Johnson grass had become severe despite efforts to control it. Within the first month the sheep made a very noticeable dent in the older grass, in addition to keeping down the younger growth. They also destroyed many of the tievines that had come up in the cane drill and in some places had made a tangled mass of cane and vines that normally hamper harvesting.

Cane growers contemplating the use of sheep would of course have to consider the matter of water for them. But one of the surprising things about the sheep, according to Chauvin, is the small amount that they require. He says the animals feed mostly during the cooler hours of the day and apparently obtain much of their water requirements by grazing the dew-laden grass at night and early in the morning.

A supply of water was already available in the field where sheep were first placed at Poplar Grove. There was none, however, in the 130 acre field where 164 head were added. Every four or five days a 55-gallon drum of water is hauled to this field and left there. Someone passes by the drum of water each day and pours water from it into an ordinary wash tub. Although there are 164 head of sheep in the field, the tub has never been found empty.

One question still not settled is how early in the season sheep can safely be placed in cane. No damage to cane was noted at Poplar Grove this year. The crop, however, was about 4 ft. high when the first sheep were turned in the field. It is possible that the animals might feed on the tender shoots of cane younger than that, especially if there is a shortage of other grazing in the field.

Although the primary reason for putting the animals in the cane was to control Johnson grass, the Wilkinson brothers believe the sheep can be a source of income in themselves. They understand that from three to seven pounds of wool now worth about 50 cents a pound can be expected from a shearing of each sheep in the spring. The amount will depend on the quality of sheep and management. The animals are producing some mutton, too. Several lambs were born after the sheep were put in the cane.

C. L. Hill, animal husbandman, of the LSU agricultural extension service, also thinks that with good management practices the sheep will return a profit aside from their value in saving labor and increasing cane yields. He and the extension farm agents in West Baton Rouge parish, A. E. Camus and H. A. Webb, are working with the Wilkinsons on a program to carry the sheep through the winter and have them ready to go back in cane fields next spring.

Hill emphasizes that biggest profits from sheep themselves will be obtained when the animals are properly cared for and managed. This involves provision of sufficient grazing for the animals, production of enough feed to winter them, controlling breeding so that lambs will be dropped in the early spring when they will make their most rapid and profitable gains, and a program to control internal parasites of the animals. The latter was formerly the biggest difficulty with sheep in Louisiana. However, it has been found that these parasites can be very satisfactorily and economically controlled by individually treating the animals twice a year with phenothiazine and by feeding the drug in salt throughout the year.

Hill also believes that a cane grower planning on running sheep in cane would be wise in providing a holding pasture where the animals would be placed any time the amount of grazing in cane fields became too scant to support them. Such a pasture could also be used to keep a few extra sheep ready in case Johnson grass should begin to get ahead of the sheep in any particular field.

If the practice of grazing sheep in sugar cane is adopted by many growers it would be advisable to arrange well ahead of time to obtain the sheep. The Wilkinsons were never able to buy a large number at any one time. They picked them up in small numbers wherever they could find them.

There may be far more sheep in the Louisiana cane section in the next few years, too. Cane growers who have heard about the sheep at Poplar Grove keep asking for information about the experiment.

"One cane grower called up by long distance and talked for an hour about them," says Horace III. "They all want to know how we're getting along with our sheep."

The Wilkinsons don't have the final answer yet on the practicability of controlling Johnson grass with sheep. But they're enthusiastic about the results thus far.

It's beginning to look like they

(Continued on page 431)

## QUOTATIONS

(Continued from page 423)

ports to New Orleans is not the same as it is to New York.

If desired by your department, our Association will report, as its official price, the Willett & Gray, Inc., daily spot quotation, properly adjusted to New Orleans basis, during the period when Louisiana raw sugar is not marketed.

We await an expression of your wishes.

Yours very truly,
R. M. Murphy, Chairman
Raw Sugar Quotation Committee.

### Rules govering daily and weekly quotations of The Cane Products Trade Association, Inc.

*Refiners*—American, Colonial, Godchaux, Henderson.

*Terms*—F. O. B. New Orleans basis.

*Quantity*—Not less than 1,000 bags.

*Kind of sale*—Only spot sales, (delivered within 35 days) covered by contract between a Louisiana raw sugar producer and any one of the refiners listed above shall be considered a spot sale of Louisiana raw sugar. No split sales of any nature shall be considered and no re-sales from one refiner to another refiner shall be considered.

*Time limit for sales*—Sales completed before 2 P. M. shall be used in arriving at a price for the day. All sales completed after 2 P. M. shall be carried over to the following market day and included in the sales of that day.

*Holidays*—The Cane Products Trade Association, Inc., shall be closed when the New Orleans and New York sugar markets are closed.

*Daily average prices*—All daily average prices shall be the simple average of the spot sales of Louisiana raw sugar recorded on any given day. When no spot sales of Louisiana raws are reported on any given day the quotation for that day shall be the New York daily average spot quotation of Willett & Gray, Inc., adjusted to a delivered New Orleans basis.

*Weekly average prices*—Weekly average prices shall be established by taking the simple average of the daily quotations of this Association.

*Average prices for the season*—The season's average price shall be established by taking the simple average of the weekly average prices issued by this Association.

*Correction of quotations*—The Committee reserves the right to adjust any erroneous quotations.

A. W. Dykers,
Secretary.

———o———

SEPTEMBER 14, 1948

MR. R. M. MURPHY
CANE PRODUCTS TRADE
ASSOCIATION, INC.
415 WHITNEY BUILDING
NEW ORLEANS, LOUISIANA

REURLET SEPTEMBER 10 WOULD APPRECIATE YOUR ASSOCIATION ISSUING YEAR ROUND OFFICIAL QUOTATION DAILY FOR NEW ORLEANS PRICE RAW SUGAR COMMENCING FRIDAY SEPTEMBER 10. ALSO WOULD APPRECIATE RECEIVING BY NIGHT LETTER COLLECT AT CLOSE OF BUSINESS EACH THURSDAY DAILY RAW SUGAR PRICES FOR A WEEKS PERIOD FROM FRIDAY THROUGH THURSDAY. EACH WIRE SHOULD SHOW DATE AND PRICE FOR EACH DAY OF WEEK. IN YOUR FIRST WIRE PLEASE STATE ADJUSTMENT USED TO CONVERT NEW YORK PRICE TO NEW ORLEANS PRICE. IF ADJUSTMENT IS CHANGED SUBSEQUENTLY PLEASE SO INDICATE IN WEEKLY WIRE GIVING DAYS AFFECTED. AFTER OPENING OF LOUISIANA SUGAR MARKETING SEASON PLEASE DISTINGUISH BETWEEN PRICE ESTABLISHED BY SALE LOUISIANA SUGAR /CODE L/ AND PRICE ESTABLISHED BY USING WILLETT AND GRAY QUOTATIONS /CODE W/.

LAWRENCE MYERS
WASHINGTON, D. C.

———o———

September 16, 1948

Mr. Lawrence Myers,
Director
Sugar Branch USDA
Washington, D. C.

RE YOUR WIRE SEPTEMBER 14 THIS ASSOCIATION WILL COMPLY WITH YOUR REQUESTS BUT WILL BE UNABLE TO WIRE WEEKLY AVERAGE PRICES UNTIL FRIDAY AFTERNOON. LETTER TO FOLLOW.

R. M. Murphy, Chairman
Quotation Committee
Cane Products Trade Association

## ANNUAL ADDRESS

(Continued from page 422)

ation. The price of blackstrap molasses has dropped from 26¢ last season to the sale price at this writing to 23¢ without any apparent reason and the League will lend all its efforts to remedy this situation. There have been few if any sales of blackstrap this year. If there is no demand for a commodity there is always danger of further decline in prices and the American Sugar Cane League will dedicate its best efforts towards a correction of the unhealthy condition of the molasses market.

The League was able to perform a real and valuable service in the matter of obtaining adequate fertilizer supplies for application in the Spring of 1948. The wartime controls over fertilizer had been discontinued, and there were serious difficulties confronting sugarcane growers in their ability to obtain deliveries of fertilizer on contracts which they thought had been

made sufficiently ahead of time to insure deliveries at the season when fertilizers are normally applied on sugarcane acreage in Louisiana. Without going into detail, and as a result of vigorous and opportune activities of the officers of the League, the fertilizer picture changed from an alarming prospect of scarcity, and in the case of some growers no prospect of any fertilizer, to a result whereby a majority of Louisiana sugarcane growers received all of their fertilizer requirements and all sugarcane growers received some of their requirements. In this connection, the League has instituted an exhaustive inquiry into the possibility of developing or participating in the manufacture or mixing of fertilizers suitable for application on sugarcane acreage. Considerable progress has been made and the outlook for future years accordingly has been greatly improved.

I do want to urge, with all the power at my command, that every sugarcane producer immediately contact his normal source of fertilizer supply, order his fertilizer requirements and accept delivery whenever delivery can be made. There are no controls on the production and distribution of fertilizer and there is no magic formula to secure your requirements, no matter how urgent and justifiable, except through the normal sources. Keep on insisting to your normal suppliers that you must have your requirements and that you are prepared to accept delivery now or at any time this winter.

The League has been trying its best to help the syrup producers in their efforts to prevail upon the Government to give them much needed relief by distributing surplus syrup to other nations under the ECA (Marshall Plan).

## Cane Breeding

There are cane planters in this room today and cane growers throughout the State that will read this message, who at the present time are at a loss to know what are the best varieties of cane to plant, as many of the old varieties are fast playing out in various parts of the State and very few of the new varieties have proven their worth. All of which brings us up to the most important question of cane breeding.

In the face of greatly increased costs of research Congress failed to increase the appropriation necessary to fully carry on the work of sugarcane breeding and seedling development by the Sugar Plant Division of the Bureau of Plant Industry. This lack of funds created a problem which seriously threatened the continuance of the cane breeding program which is so necessary to the maintenance of the Louisiana Sugar Industry.

The American Sugar Cane League recognized the gravity of the situation and in December, 1947 made available to the Sugar Plant Division $15,000.00 to be used from December, 1947 to July, 1948. In the meantime, the League arranged with the Louisiana Experiment Station at L. S. U. to establish a cane breeding and seedling development program on a State level. The League sponsored, through the State Farm Council, a movement to secure a $25,000 annual State appropriation for the University and earmarked for this specific purpose. The League also committed itself to contribute $10,000.00 to the Louisiana Experiment Station to enlarge its greenhouse and other facilities for this program.

After the State appropriation was secured it was possible, because of the usual splendid cooperative attitude of the University and the Sugar Plant Division of the Bureau of Plant Industry to work out a cooperative agreement and program whereby the actual breeding will be done at the Canal Point Florida Federal Station and the seedling development done by L. S. U. and the Federal Station in Houma.

In this cooperative agreement the League committed itself to provide annually to the Sugar Plant Division an additional $5,000.00. This is a stop gap arrangement and the need of additional funds still exists. The League will continue its efforts to secure proper financing through Federal appropriations and by efforts to have a cane breeding project accepted by the Research and Marketing Administration.

The emergency financing which the League was called on to do necessitated a commitment of $31,700.00 This is of course more money than can be financed from current revenues and has caused radical impairment of the reserve which conservative management had built up. The League dues have not been increased since it was organized in 1922. All values in the meantime have more than doubled, including the price of sugarcane. The Louisiana sugar industry must certainly maintain and even expand the seed cane development program.

Trash in cane is still one of the serious problems facing the industry. While the abnormally low sugar recovery of the past few years cannot be all charged to excessive trash in cane, the larger part of it may certainly be justifiably so charged.

The American Sugar Cane League was largely responsible, through its Washington office, for the establishment of an Agricultural Engineering Research program at Houma. Efforts are being made to develop detrashing, planting, harvesting, and other equipment looking to the full mechanization of the industry.

A special League committee meets periodically with the Federal scientists to make suggestions and to discuss progress reports on the equipment development program.

One of the standard serious threats to sugarcane production is the spring and summer drought. It is rather discouraging to see a stand of sugarcane representing a potential bumper crop wither away day by day because of lack of moisture. While some of the damage can be reduced by proper land management, the lack of rain at the proper time may spell the difference between a crop returning a reasonable profit or a loss. The League has cooperated and aided financially in the efforts to create rains by using dry ice on clouds. This may develop into a boon to sugarcane production by providing a degree of rainfall when sorely needed by growing sugarcane.

I acknowledge with deep appreciation the cooperation so liberally given to me by the members and employes of the League during my term of office and I take this opportunity to extend my sincere thanks to all of them.

## JOHNSON GRASS

(Continued from page 428)

started something big when they put sheep in their sugar cane.

—o—

Mr. P. Chauvin Wilkinson,
Poplar Grove Planting &
Refining Co.,
Port Allen, La.
Dear Mr. Wilkinson:

Thank you very much for your letter of September 14th, together with Mr. Lawrence George's article. Your experiment with the use of sheep to control Johnson Grass is an interesting experiment, and the results are certainly encouraging.

The success of your experiment is dramatic to say the least.

I hope you will not mind our using Mr. George's article in the Sugar Bulletin, as I believe a great many planters here in the State will wish to visit your experimental plots before the cane is harvested.

It is only through such pioneering work that you people are doing that we are going to be able to control Johnson Grass.

Very truly yours,
F. Evans Farwell, Chairman
Johnson Grass Control Committee,
American Sugar Cane League

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# THE SUGAR BULLETIN

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Vol. 27 NEW ORLEANS, LA., OCTOBER 15, 1948 No. 2

# 50 Years of BETTER LEGUME YIELDS

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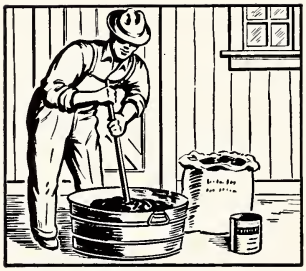

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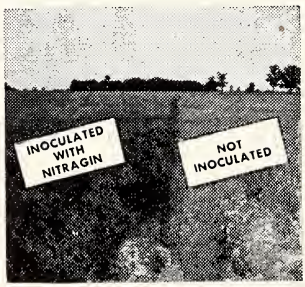


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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

**The Official Organ of the American Sugar Cane League of the U. S. A.**

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# FAIR AND REASONABLE PRICES FOR THE 1948 CROP OF LOUISIANA SUGARCANE

TITLE 7—AGRICULTURE
CHAPTER VIII
PRODUCTION AND MARKETING ADMINISTRATION
(Sugar Branch)
Part 802—SUGAR DETERMINATIONS

Pursuant to the provisions of Section 301(c)(2) of the Sugar Act of 1948, after investigation, and due consideration of the evidence obtained at the public hearing held in Thibodaux, Louisiana, on July 22, 1948, the following determination is hereby issued:

Section 802.22 *Fair and Reasonable Prices for the* 1948 *Crop of Louisiana Sugarcane.* (a) *Basic price.* When the price of 96° raw sugar, duty paid basis, is 3.50 cents per pound, the basic price for the 1948 crop of Louisiana sugarcane shall be not less than $1.00 per ton of standard sugarcane for each 1 cent of the average price per pound of raw sugar determined in accordance with whichever of the following options is agreed upon: (1) the average of the weekly quotations of 96° raw sugar, duty paid basis, on the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association Exchange for the week in which such sugarcane is delivered; or (2) the simple average of the weekly quotations of 96° raw sugar, duty paid basis, on the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association Exchange for the weeks from Friday, October 8, 1948 (or the Friday within the first marketing week of actual trading), to January 31, 1949; except that if the Director of the Sugar Branch determines that for any weeks or weeks such weekly averages do not reflect the true market value of sugar, because of inadequate volume or other factors, the Director may designate the weekly and seasonal prices to be effective under this determination:

*Provided however,*

(i) That for each decline of 1/4 cent in the price of 1 pound of 96° raw sugar, duty paid basis, below 3.50 cents per pound, the price of standard sugarcane shall be reduced by not more than 3 percent, with intervening prices in proportion, unless the price of sugar falls below 2.75 cents per pound, in which case no further reduction shall be made; and

(ii) That for an advance of 1/4 cent in the price of 1 pound of 96° raw sugar, duty paid basis, above 3.50 cents per pound, the price of standard sugarcane shall be increased by not less than 3 percent, with intervening prices in proportion, unless the price of raw sugar exceeds 3.75 cents per pound, in which case settlement shall be made on the basis of $1.03 for each 1 cent of the price.

(b) *Standard Sugarcane.* Standard sugarcane shall be sugarcane containing no more sucrose in the normal juice than was defined as standard sugarcane by the processor in his sugarcane purchase contract or contracts, verbal or written, used for the 1947 crop:

*Provided however,*

(i) That the net weight of a ton of sugarcane of the 1948 crop shall be not less than the gross weight thereof less the trash content of such sugarcane in excess of 3 percent;

(ii) That the premiums applicable to sugarcane of the 1948 crop containing more sucrose in the normal juice than standard sugarcane shall be not less than those applied to the 1947 crop; and

(iii) That the discounts applicable to sugarcane of the 1948 crop containing less sucrose in the normal juice than standard sugarcane shall be not greater than those applied to the 1947 crop.

(c) *Molasses bonus.* On each ton of Louisiana sugarcane there shall be paid a molasses bonus, such bonus to be computed by taking 1/2 of the excess,

(Continued on page 27)

# RULES GOVERNING TRASH DETERMINATIONS AND DEDUCTIONS

(1948 *Sugar Mill Letter No.* 4)
UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
University Station
Baton Rouge, Louisiana

To Louisiana Sugar Mills
(Copy to Parish Administrative Officers in Sugar Parishes)

Subject: Rules Governing Trash Determinations and Deductions

The 1948 Fair Price Determination provides for payment on a "net weight" standard ton basis; that is, the gross weight of sugarcane less the trash content of such sugarcane in excess of three percent.

The Commercially Recoverable Sugar Determination also provides rates of payment (sugarcane benefit payments) based on net weights of sugarcane. Processors are, therefore, advised to make trash determinations on a reasonable number of representative samples of sugarcane of all growers and to keep permanent records showing the percent total trash, percent trash deductions, weight of trash deducted, and the net weight of sugarcane for which payment is made.

No prescribed rules as to the *number of samples* to be taken will be laid down in this letter. However, the number of tests made shall be sufficient to give a fair daily or weekly average of the trash content of each grower's deliveries of sugarcane and this average will be used to determine the deduction to be applied to all such deliveries.

No particular *method* of testing for trash content will be outlined in this letter, but the method suggested in the bulletin by Arthur G. Keller, or entitled "The Determination of Trash in Sugarcane, Recommended Procedure," or any other method will be acceptable if the following basic steps are taken:

1. The sample for testing should be taken from a loosened bundle of sugarcane placed on the ground or loading table.
2. The sample should be taken from both ends by lifting a double arm full either manually or with a grab.
3. The sample should be placed on a piece of canvas, cradle or stretcher with as little loss of trash as possible and weighed on a platform scale conveniently placed.
4. The sample should then be stripped of all leaves using a regular cane knife, (it is not necessary to remove every last particle that may cling to the stalk), replaced on the same canvas, cradle or stretcher from which all trash and dirt has been removed, and reweighed.
5. Both weights should be recorded in a book provided for this purpose, the weight of trash determined, and the percentage of trash computed. Columns in the record book should have the following or similar headings:

| Date | Name of Grower | Gross Weight of Sample Including Tare | Weight of Cleaned Sugarcane Including Tare | Weight of Trash | Percentage Trash |
|---|---|---|---|---|---|

For the sake of uniformity and in order that there will be no misunderstanding of the provisions governing trash deductions, the following procedure will govern:

1. Trash is defined as any leaves, loose tops, weeds, stones and soil which may be contained in sugarcane delivered to a factory. Unripe top joints not removed from the stalk are *not* considered as trash, but green leaves and unformed joints (which might include the bud) are considered as trash.

**(Continued on next page)**

2. Trash determinations will be made on all sugarcane delivered for processing into sugar regardless of its *ownership* or *trash content.* The number of samples tested should be proportioned to the amount of sugarcane delivered. Large growers should be given more tests than smaller growers.
3. The simple average of all daily deliveries (weekly in the case of very small growers) will be used in determining whether deductions will be made.
4. Deductions will be made of all trash in excess of 3% of the gross weight of the daily deliveries of sugarcane based on the simple average of all trash tests made that day. Example:

   Three deliveries consisting of

   10 tons at 2%
   15 tons at 4%
   25 tons at 6%

   50 tons at 12% 12 ÷ 3 = 4% simple average
   − 3%
   1% deduction

   50 tons x .01 = 0.5 tons trash deducted

5. Sugarcane tops will not be considered as trash unless they are found loose in the grabbed sample. However, any leaves adhering to immature joints of sugarcane may be removed as trash.
6. Processors may refuse to accept sugarcane that has not been properly topped or cleaned, but such refusal shall not be used as a bargaining point for paying less than the cane is worth.
7. Growers shall have the privilege of witnessing all tests made for trash and, where possible, weight tickets should show the amount of trash deducted, if any, or lists showing the names of growers delivering trashy cane and the amount of trash deducted should be posted near the scale house for their convenience.
8. All trash determinations will be subject to review by representatives of the State PMA Office.
9. Processors will make trash reports at intervals during the crop when called upon to do so.
10. For the sake of uniformity in keeping sugarcane and trash records, the following is suggested as a guide:

| Sugarcane as Delivered | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gross Weight Tons | Tare Tons | Net Weight Tons | Percent Total Trash | Percent Trash Deduction | Weight of Trash Deducted Tons | Net Weight of Actual Sugarcane for Payment Tons | Percent Normal Juice Sucrose | Conversion Factor | Weight of Standard Sugarcane Tons |
| 18.000 | 4.000 | 14.000 | 7.0 | 4.0 | 0.560 | 13.440 | 12.0 | 100.0 | 13.440 |

11. Although payment for sugarcane will be made on a net cane basis, factory daily and run reports will be made on a *gross weight basis.*

If there are any questions in connection with the above please take them up with our field representatives, Mr. Thomas and Mr. Applebaum, or with Mr. Grayson of the State Office.

L. A. MULLIN
Executive Officer

# LOUISIANA SUGAR AND RICE EXCHANGE ADOPTS NEW RULES GOVERNING RAW SUGAR QUOTATIONS

The Louisiana Sugar & Rice Exchange has announced that its Raw Sugar Committee will be guided by a revised set of rules this season in arriving at daily and weekly average raw sugar prices.

The Exchange has requested the American Sugar Cane League to advise the Louisiana sugar industry of the rule changes and we take pleasure in doing so in this issue of *The Sugar Bulletin.* The new rules and other explanatory letters and resolutions are printed below.

(Continued on page 30)

# DETERMINATION OF COMMERCIALLY RECOVERABLE SUGAR

TITLE 7—AGRICULTURE
CHAPTER VIII
PRODUCTION AND MARKETING ADMINISTRATION
(Sugar Branch)
Part 802—SUGAR DETERMINATIONS
Determination of Sugar Commercially Recoverable in Mainland Cane Sugar Area
(Revised)

Pursuant to the provisions of Section 302 (a) of the Sugar Act of 1948, the following determination is hereby issued:

802.21 Sugar Commercially Recoverable from Sugarcane in the Mainland Cane Sugar Area. The amount of sugar commercially recoverable from the sugarcane grown on a farm in the Mainland cane sugar area and marketed (or processed by the producer) for the extraction of sugar shall be obtained by multiplying the number of short tons (net weight) of such sugarcane by the hundredweight of sugar, raw value, specified for the average percentage of sucrose in the normal juice of such sugarcane (computed to the nearest one-tenth of one percent) as follows:

(a) For Farms in Louisiana and Florida:

| Percentage of sucrose in normal juice | Hundredweight of Sugar[1] Louisiana | Florida |
|---|---|---|
| 5.0 | 0.451 | 0.502 |
| 6.0 | .582 | .645 |
| 7.0 | .735 | .810 |
| 8.0 | .896 | .984 |
| 9.0 | 1.062 | 1.161 |
| 10.0 | 1.258 | 1.376 |
| 11.0 | 1.434 | 1.566 |
| 12.0 | 1.589 | 1.735 |
| 13.0 | 1.747 | 1.907 |
| 14.0 | 1.908 | 2.081 |
| 15.0 | 2.071 | 2.259 |
| 16.0 | 2.237 | 2.438 |
| 17.0 | 2.404 | 2.620 |
| 18.0 | 2.574 | 2.804 |
| 19.0 | 2.745 | 2.989 |
| 20.0 | 2.918 | 3.177 |

[1] Sugar recoverable for the intervening tenths of 1 percent shall be calculated by straight interpolation.

This determination supersedes with respect to the 1948 and subsequent crops, the "Determination of Sugar Commercially Recoverable from Sugarcane in the Mainland Cane Sugar Area" issued January 31, 1939.

## Statement of Bases and Considerations

Sugar Act Requirements. Determinations of sugar commercially recoverable from sugar beets and sugarcane are required under Section 302 (a) of the Sugar Act of 1948 for the purpose of calculating amounts of sugar upon which payment may be made.

Historical Background. Under the former determination for this area, the amount of sugar commercially recoverable from sugarcane in Louisiana was based on the average actual recovery of sugar for the 1935 and 1936 crop seasons, adjusted for the lower recovery obtained from the 1937 crop. In Florida, recoverability was based on the actual recovery data of the U. S. Sugar Corporation (representing 95 percent of the total crop) for the same crop seasons, with a similar adjustment for the 1937 recovery. The customary basis of settlements between growers and processors for sugar cane was recognized by basing recoverability in Louisiana on the percentage of sucrose in the normal juice of the sugarcane and in Florida on the percentage of sucrose in the crusher juice.

Recovery Trends. The following table shows the annual recoveries in pounds of sugar per ton (gross weight) of

(Continued on page 26)

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# PAST EXPERIMENTS AND FUTURE PROSPECTS OF ARTIFICIAL RAIN MAKING

*by Charles A. Farwell, Milliken & Farwell*

*Presented at the meeting of the Agricultural Section, Houma, La., Aug. 4, 1948, of the Louisiana Society of Sugarcane Technologists*

So much has been written about the pros and cons of producing rainfall by seeding cumulous clouds with dry ice and other stimulators that we feel that we should first frankly state what we think are the possibilities of obtaining good results with the equipment now available.

We do not feel that these attempts to produce rainfall are in the nature of attempting a miracle or supplanting the work of nature. We simply feel that by the use of the dry ice method under proper conditions, we can produce rain where it would not have otherwise have fallen.

In our opinion, the minimum requirements for the production of rain in a given locality by the dry ice method are as follows:

1. Well formed large cumulous clouds.
2. These clouds should have at least a thousand feet of the cloud extending above the altitude at which the temperature is 32° F.
3. A moisture content of 50% or better at and above the freezing level.
4. Winds at the freezing level and above, traveling in the same direction as surface winds. Or, preferably, practically no wind at all in the upper levels.
5. Last, but not least, an aircraft which is capable of flying at the necessary altitudes, and a pilot and crew trained to do this work.

The first attempt on our part to produce rain by the dry ice method was made on August 9, 1947 in the marsh area south of Morgan City, Louisiana. On this day a cumulous cloud was seeded with dry ice at 19,600 feet, with the results of producing a heavy shower in the area approximately 5 miles southwest of Morgan City. A check with the Weather Bureau established the fact that this was the only rainfall within an area of approximately 50 miles in all directions during that day. We have photographs of this entire operation.

Our next attempt was on September 10, 1947 when the plane was stationed at Harding Field in Baton Rouge. No satisfactory clouds developed that day, so the plane remained in Baton Rouge and took on a fresh supply of dry ice on the morning of September 11, 1947. There were no clouds developing in the area of Baton Rouge that morning or in the early afternoon. Therefore, at about 2 P.M. the pilot of the plane was instructed to fly to Donaldsonville and thence down Bayou Lafourche in an attempt to locate a suitable cloud. He was instructed that if no suitable cloud was encountered to fly back to Donaldsonville and then on in to New Orleans. At approximately 2:30 P.M. a group of suitable clouds were encountered approximately 40 miles southeast of Baton Rouge. The center cloud of this group was considered the best, and two attempts were made to drop dry ice into this cloud. However, on the first two attempts, the cloud was climbing so fast that the plane could not go over it. On the third attempt, at which time the cloud had reached an altitude of about 17,500 feet, approximately 70 pounds of dry ice was dropped directly into the top of the cloud. At approximately 3:30 P.M. rain began to fall from the bottom of this cloud, and at approximately 3:45 P.M. the cloud had reached its maximum development at a height estimated to be above 30,000 feet. The rainfall from this cloud was recorded as being 52/100ths of an inch in the rain gauge at Reserve. The rain extended over the entire area of Reserve Plantation and continued on into the woods north and northwest of Reserve Plantation.

The only other rainfall on that day occurred over New Orleans, and southwest of Morgan City. The conclusion

reached in the informal report on this experiment by the officials of the Weather Bureau was as follows:

1. The rainfall recorded at Reserve was a result of the seeding experiment, and
2. Rain would not have occurred without the seeding.

Our next attempt was made on June 23, 1948. However, on that date the cumulous clouds did not develop sufficiently to go above the freezing level, and therefore no drop of dry ice was made.

On June 28, 1948 the plane worked the area bounded by Houma, Thibodaux, Donaldsonville, and Convent. The plane left New Orleans Airport at 12:30 P.M. and proceeded to Little Texas. Upon reaching its destination, it climbed to approximately 18,000 feet and seeded with dry ice the selected cloud. After seeding this cloud, the plane descended to roughly 10,000 feet and developments were observed. It was noted that this cloud proceeded in a northerly direction and after approximately 25 minutes began to rain. A second drop of dry ice was made in the center of a three cumulous type cloud formation. This drop was made southwest of St. James, roughly in a line between Napoleonville and St. James. Upon observing the reaction of this drop, it was noted that not only the center cloud reacted to the drop, but also the two outlying clouds, thus giving the impression of a chain reaction. Considerable rain was noted to fall over the St. James-Lagan-Covent area.

On June 30, 1948 the same area was worked as on June 28, 1948. The clouds were seeded in an approximate area of Morgan City and Gibson at 19,000 feet. The wind was from the south this time. After dropping the ice, it was noted that the camera was broken, and the plane had to return to New Orleans for another. Upon returning to the seeded area, a heavy rain shower was noted to fall over the western portion of Little Texas and over Lake Verret, thus indicating that the wind had swung slightly southwest from the south. In seeding this cloud, which was a double-headed cumulous cloud, only one side was seeded, and altnough it produced rain about 30 minutes, it was noted that the other portion of this cloud began to rain after about an hour and 20 minutes, as shown in the photographs of June 30, 1948 flight.

On June 10, 1948 the next attempt was made. In this experiment we were trying to drop the rain within a very narrow area, that is, an area extending from Thibodaux to Labadieville. This experiment was a prime example of the need for radio contact between the plane and a trained ground observer. The Navy had agreed to fly reconnaisance flights that morning and give us a report on the cloud formations. All during the morning and up until 12:30 P.M. we had received reports from the Navy of excellent cloud formations southeast and east of Houma. The prevailing winds were from the East. However, during the time that elapsed between the plane's take-off from New Orleans and the time that these clouds were seeded, the winds aloft had shifted to South. Had the pilot been able to know this, he could have dropped his dry ice south of Thibodaux instead of east of Thibodaux. However, not being able to communicate with the ground, he followed his last instructions and dropped the ice in well-formed cumulous clouds in the area between Lake Boeuf and Thibodaux. Photographs of this flight show that excellent rainfall was produced and actually came within a half mile of the area over which it was intended, but then, due to the shift in the winds, the rainfall continued in a northerly direction, finally crossing the Mississippi River in the neighborhood of St. James and Lagan, Louisiana.

On July 17, 1948 the plane left New Orleans at approximately 1:15 P.M. with the idea of going to Houma and observing the clouds in that area. When the plane reached the neighborhood of Delta Farms, it encountered a large cumulous formation and dropped part of its ice into this formation, with the result that a heavy shower was observed by the writer to fall in the area between Lockport and Raceland, Louisiana. The next drop was made slightly south of Houma and resulted in a heavy

shower in the Houma-Ashland area. Again on his flight we had the cooperation of the Naval Air Service and found a large cumulous formation that had traveled from a point approximately 10 miles southeast of Houma to a point about 15 miles east of Jeanerette without producing any natural rain. Upon instructions, the pilot dropped dry ice into this large formation, with the result of producing a heavy shower in the area around Jeanerette, Louisiana. The drop was made at approximately 18,000 feet. The pilot of the aircraft reported that rain was observed falling from the bottom of this cloud shortly after 3 o'clock and rain was still falling at about 3:45 when the pilot again flew over this area and subsequently landed at New Iberia, Louisiana.

The next attempt was made on July 24, 1948. The plane took off from the New Orleans Airport at roughly 9 A.M. and landed at Houma awaiting for suitable clouds. No suitable clouds developed during the day, and at approximately 1:00 P.M. the plane took off from Houma, with the idea of returning to New Orleans. However, in the area between Thibodaux and St. James, two clouds that gave the impression of being the suitable height were noted. The pilot decided to seed these clouds and climbed 19,800 feet. Two clouds were selected right together and dry ice was dropped into the tops of both of these clouds. This took a little longer, and after approximately 35 minutes, these clouds in the process of being developed moved south of Thibodaux to Lafourche Crossing and began to rain. This rainfall was noted by the weather observer at Schriever and was officially reported by him as a heavy rain which occurred from 2:30 to 3:30 P.M. The plane did not remain in the vicinity and we therefore have no way of knowing whether the heavy rain at Houma later that afternoon was out of this same cloud, but inasmuch as this cloud had travelled steadily from north to south, we presume that it was the same one.

The results obtained in the flights described above lead us to believe that under proper conditions, the production of rain by the dry ice method can become a routine procedure. Our biggest problem now is with proper cloud conditions to be able to drop the rain where we want it, when we want it.

In conclusion, the writer would like to express his sincere thanks to all of those who have taken part in this work, and chiefly to the New Orleans Weather Bureau and the Naval Air Station and Mr. B. C. Brown of the Brown Velvet Ice Cream Co. of New Orleans, for their splendid cooperation in allowing us to take rather large quantities of dry ice on very short notice in order to have enough ice to properly conduct this work.

## RECOVERABLE SUGAR

(Continued from page 23)

sugarcane in Louisiana and Florida for the crops years 1935 through 1947:

| Crop | Pounds of Sugar Per Ton of Cane | |
|---|---|---|
| | Louisiana | Florida |
| 1935 | 169 | 173 |
| 1936 | 161 | 182 |
| 1937 | 154 | 179 |
| 1938 | 169 | 209 |
| 1939 | 173 | 195 |
| 1940 | 162 | 208 |
| 1941 | 165 | 203 |
| 1942 | 171 | 185 |
| 1943 | 164 | 182 |
| 1944 | 153 | 174 |
| 1945 | 151 | 190 |
| 1946 | 156 | 180 |
| 1947 | 149 | 172 |

The average recovery for the base years 1935 and 1936 was 165 pounds in Louisiana and 178 pounds in Florida. The average recovery for the prewar period of 1937-41 was 165 pounds in Louisiana and 199 pounds in Florida. Thus, the average recovery in Louisiana during this period remained the same as during the base period, whereas in Florida the average recovery increased from 178 to 199 pounds. The increase in Florida was due primarily to the development of higher yielding varieties of sugarcane and favorable growing and harvesting conditions. The 1942-47 average recovery was 157 pounds in Louisiana and 180 pounds in Florida. The significant decline in Louisiana from the base period was caused largely

by the increased amount of trash delivered with the cane on account of mechanical cutting and loading. It is apparent, therefore that the recovery rates established for Louisiana under the former determination are not indicative of current recoveries.

Normal Juice vs. Crusher Juice Basis. The following figures for Florida mills for the period 1942-47 show the relationship between actual recoveries, the recoveries based on crusher juice sucrose as computed under the former determination, and the recoveries when computed on normal juice sucrose.

| Crop | Pounds of Sugar Recovered Per Ton of Cane Computed on Basis of — Actual | Crusher Juice | Normal Juice |
|---|---|---|---|
| 1942 | 185 | 197 | 184 |
| 1943 | 182 | 194 | 182 |
| 1944 | 174 | 187 | 175 |
| 1945 | 190 | 198 | 187 |
| 1946 | 180 | 193 | 181 |
| 1947 | 172 | 188 | 175 |
| Average | 180 | 193 | 181 |

These data show that sugar recovery based on normal juice sucrose is almost identical to the actual recovery, whereas there is a wide variation between actual recovery and recovery based on crushed juice. Therefore, the foregoing determination provides for the use of the normal juice basis in Florida as well as in Louisiana.

Recovery rates in foregoing determination. The recovery rates at the various sucrose levels for both Louisiana and Florida are based on the average recovery during the crop years 1942-46 in each state. The average amount of sugar recovered per ton of cane during these crop years is deemed to be representative of the recovery which can be expected under present conditions. The 1947 crop is not included because subnormal rates of recovery were obtained in both states on this crop, which was grown and harvested under unfavorable weather conditions and in Louisiana was milled with abnormally high trash and moisture content. Since the actual yields of sugar per ton of cane in Louisiana are calculated by the processors on a gross weight basis, while both processor and Sugar Act payments are calculated on net weights (gross weight less weight of trash in excess of three percent) the recovery rates for Louisiana were adjusted to a net weight basis. No adjustment in the rates for Florida is necessary since Florida does not have a similar trash problem, primarily because of hand-cutting of cane.

The average actual yields of sugar for the 1942-46 period was 159.1 pounds per ton of cane (gross weight) in Louisiana and 182.5 pounds in Florida. The amounts recoverable for this period according to the former determination were 164.4 pounds in Louisiana and 193.7 pounds in Florida. If recoverability for this period is calculated under the foregoing determination, the differences between actual and calculated recoveries are largely eliminated.

Accordingly I hereby find and conclude that the foregoing determination will effectuate the purposes of Section 302 (a) of the Sugar Act of 1948.

Issued this 1st day of October 1948.

A. J. LOVELAND
Acting Secretary

## FAIR PRICES

(Continued from page 20)

if any, of the average price per gallon of blackstrap molasses (as quoted by the Exchanges set out above for the period there specified except that if the Director of the Sugar Branch finds that for any such period the prices quoted by the Exchanges do not reflect the true market value of molasses because of inadequate volume or other factors, the Director may designate the price to be effective under this determination) over 8 cents, and multiplying the product by 6¼ (the number of gallons of blackstrap molasses produced per ton of sugarcane as an average for the three-year period, 1938-1940).

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(d) *General.*

(1) Deductions based upon decreased boiling house efficiency may be made for frozen sugarcane accepted by the processor (it being understood that cane shall not be considered as frozen even after being subjected to freezing temperature unless and until there is evidence of damage having taken place because of the freeze) at a rate not in excess of 3.775 percent of the payment, computed without regard to the molasses bonus, for each 0.25 cc. of acidity above 2.25 cc. but not in excess of 4.50 cc. (analyzed in accordance with the established methods of the area, with intervening fractions computed to the nearest multiple of 0.05 cc.).

(2) Costs of hoisting and weighing sugarcane, which were absorbed by the processor in 1947, shall be absorbed by the processor in 1948; but nothing in this subparagraph shall be construed as prohibiting negotiations with respect to the level of such costs, subject to review by the Director of the Sugar Branch, upon appeal, in the event of changes alleged to be unfair to either the producer or the processor.

(3) Where the only available practicable means of transportation are rail facilities and the distance to the nearest factory is in excess of 50 miles, the cost of transportation may be shared by the processor and the producer, by mutual consent, subject to review by the Director of the Sugar Branch upon appeal.

(4) The processor shall not reduce the returns from the 1948 crop of Louisiana sugarcane to the producer below those determined herein through any subterfuge or device whatsoever.

## Statement of Bases and Considerations

(a)—*General*

The foregoing determination establishes the level of prices which must be paid for 1948 crop sugarcane purchased by producer-processors (i.e., producers who are also, directly or indirectly, processors of sugarcane) as one of the conditions for payment under the Sugar Act of 1948. In this statement the foregoing determination, as well as determinations for prior years, will be referred to as "price determination" identified by the crop year for which effective.

(b)—*Requirements of the Sugar Act*

The Sugar Act requires that in determining fair and reasonable prices public hearings be held and investigations made. Accordingly, on July 22, 1948, a public hearing was held in Thibodaux, Louisiana, at which time interested parties presented testimony with respect to fair and reasonable prices for sugarcane of the 1948 crop. In determining fair and reasonable prices, consideration has been given to testimony presented at the public hearing and to data resulting from investigations of pertinent economic factors.

(c)—*Background*

Determinations of fair and reasonable prices for sugarcane in Louisiana have been issued for each crop beginning with the 1937 crop. The 1937 price determination approved the basic pricing structure contained in sugarcane purchase contracts agreed upon between producers and processors. Since that time, price determinations have continued in effect without major modification of such basic pricing structure because of joint producer-processor recommendations each year and because the pertinent economic factors considered at the time the basic pricing structure was approved have remained relatively stable in most of the years. During the war years, the producers' share of total proceeds was influenced by Commodity Credit Corporation incentive payments, resulting in higher returns to producers than they would have received had the market price of sugar determined their returns.

Sugarcane prices per ton have been related directly to the price of 96° raw sugar and have been calculated at a rate of $1.00 per ton of standard sugarcane for each 1 cent of the average price per pound of raw sugar when such price was 3½ cents per pound. Such prices were subject to upward adjustments to a maximum rate of $1.03 per 1 cent of price at and above 3¾ cents per pound and downward adjustments to a minimum of $0.91 per 1 cent of price at and below 2¾ cents

(intervening rates in proportion).

In the 1941 price determination provision was made for producer participation in the proceeds from molasses. This action was taken after the price of molasses had risen to a point where it became a significant factor in the total income of the industry. Subsequent price determinations have continued the molasses sharing provision.

(d)—1948 *Price Determination*

The only major change in the 1948 price determination from the 1947 price determination is that the definition of standard sugarcane has been revised to provide for weight deductions for trash in excess of 3 percent. This action formalizes the administrative authorizations which have been in effect since 1943; it provides a basis for uniform treatment of trash deductions throughout the industry; and it conforms to recommendations made by the industry at the fair price hearing.

At the public hearing the Grower-Processor Committee recommended that the historical pricing structure be retained. However, this Committee recommended that the basic price paid producer be reduced 1.75 percent in view of the abnormally low recoveries of sugar obtained in recent years at the various levels of sucrose content. Apparently the grower representatives of the Committee, after reviewing the facts as to costs, incomes and sugar recoveries, became concerned over the possible consequences of the general reduction in recoveries of sugar and the inordinately low recoveries obtained by some mills. The Committee recommendation for a reduction of 1.75 percent in payments to growers resulted from a compromise between a greater reduction urged by processor representatives and a smaller reduction urged by grower representatives. Although the Department recognizes the seriousness of large losses in sugar recoveries, it is also impressed by the fact that available information indicates that processors as a group have received a higher percentage of the total returns from sugar than the percentage of total costs borne by them. Under the adverse growing and harvesting conditions in 1947, growers as a group suffered losses, whereas processors as a group made moderate profits. In view of these facts the Department is unable to accept the recommendations of the Grower-Processor Committee for a downward adjustment in payments to growers. Accordingly, the historical pricing formula is continued for the 1948 crop at the same levels that prevailed for the 1947 and recent previous crops.

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Accordingly, I find and conclude that the foregoing price determination for the 1948 crop of Louisiana sugarcane is fair and reasonable and that compliance therewith will effectuate the price provisions of the Sugar Act of 1948. (Sections 301 and 403 of Public Law 388, 80th Congress).

Issued this 1st day of October, 1948.

/s/ A. J. LOVELAND
Acting Secretary of Agriculture

## QUOTATIONS

(Continued from page 22)

LOUISIANA SUGAR & RICE EXCHANGE
New Orleans 16, 1948

Mr. Marcel J. Voorhies, Gen. Mgr.
American Sugar Cane League
414 Whitney Building
New Orleans 12, Louisiana

Dear Mr. Voorhies:

Pursuant to a meeting held this day by the Board of Directors and the Quotation Committee of this Exchange, I am pleased to hand you copies of resolution which you may forward to Mr. Allen. You are also at liberty to make copies of same for distribution to others.

We trust you will give some publicity to these resolutions, as you did to the Cane Products Trade Association in your bulletin.

With best wishes, I am

Yours very truly,
LOUISIANA SUGAR & RICE EXCHANGE
RAYMOND J. MARTINEZ
Executive Secretary

*Be it resolved* that when the quotations by this Exchange are identical with the quotations of the Cane Products Trade Association, Inc., the Quotations Committee of this Exchange be, and it is hereby authorized and empowered to join with the Cane Products Trade Association, Inc. in furnishing the Production and Marketing Administration, Washington, D. C. with joint quotations.

*Be it further resolved* that when the quotations by this Exchange are not identical with the quotations by the Cane Products Trade Association, Inc. that, in such event, the Quotations

Committee shall issue its quotations independent of that Association.

*Be it resolved* that the following rules shall govern daily and weekly quotations of the Louisiana Sugar and Rice Exchange:

*Refiners*—American, Colonial, Godchaux, Henderson.

*Terms*—F. O. B. New Orleans basis.

*Quantity*—Not less than 1,000 bags.

*Kind of sale*—Only spot sales, (delivered within 35 days) covered by contract between a Louisiana raw sugar producer and any one of the refiners listed above shall be considered a spot sale of Louisiana raw sugar. No split sales of any nature shall be considered and no re-sales from one refiner to another refiner shall be considered.

*Time limit for sales*—Sales completed before 2 P. M. shall be used in arriving at a price for the day. All sales completed after 2 P. M. shall be carried over to the following market day and included in the sales of that day.

*Holidays*—The Louisiana Sugar and Rice Exchange shall be closed when the New Orleans and New York sugar markets are closed.

*Daily average prices*—All daily average prices shall be the simple average of the spot sales of Louisiana raw sugar recorded on any given day. When no spot sales of Louisiana raws are reported on any given day the quotation for that day shall be the New York daily average spot quotation of Willett & Gray, Inc., adjusted to a delivered New Orleans basis.

*Weekly average prices*—Weekly average prices shall be established by taking the simple average of the daily quotations of this Exchange.

*Average prices for the season*—The season's average price shall be established by taking the simple average of the weekly average prices issued by this Exchange.

*Correction of quotations*—The Committee reserves the right to adjust any erroneous quotations.

*Be it further resolved* that all By-laws of this Exchange in conflict with this resolution, be and the same are hereby changed and amended.


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# LOSSES RESULTING FROM DELAYED MILLING OF SUGARCANE[1]

*by R. T. Balch and C. B. Broeg, U. S. Sugar Plant Field Laboratory Houma, Louisiana, and J. I. Lauritzen*

A delay in milling sugarcane after it has been cut causes the cane to lose value in two respects. It will lose weight by evaporation of moisture from the stalks unless there is continuing rainfall or other unusual circumstances and it will lose sucrose and quality by deterioration. In addition to weather conditions, several less important factors, such as the age of the cane and the variety, also have some influence.

Decreased yields of cane and sugar from the Louisiana crops have aroused much concern and discussion during the past few years and many things have been blamed for this result. It seems that weight losses and deterioration of cut cane should rightfully assume some of the blame, although seldom mentioned. Elimination of these effects would be a great benefit to the industry. It is hoped that the study reported here will furnish an incentive to the industry to investigate harvesting methods in detail and thus lead to greatly improved field-harvesting practices.

## Weight Losses

During periods of the warm and relatively dry weather characteristic of the early part of the Louisiana harvesting season, mill cane in heap rows may lose from 1 to 2% in weight per day of exposure. Even in showery weather, at the beginning of the season, some loss in weight will occur. But with the advance of the season the rate of evaporation decreases in correlation with a drop in the average temperature and a rise in relative humidity of the air. The loss may even become quite negligible during the characteristically rainy, cold weather of the late season.

If one assumes, conservatively, an average loss of weight of 1% per day for mill cane stored in the fields under typical Louisiana conditions, there is a daily loss of about 45,000 tons of cane. If the average lag between cutting and milling amounts to 5 days, this reduced tonnage, amounting to about 225,000 tons, means a monetary loss to the growers of about 1-1/2 million dollars annually.

In a number of tests recently conducted by the writers and by others (1) (2) (3), removing trash by burning apparently did not affect the rate at which the stalks lost water by evaporation. Although other observations (5, 6) have been made where burning greatly accelerated the rate of moisture loss, in those tests the cane was stored in the field under severe drying conditions. No doubt the subject should be further studied under Louisiana weather conditions to determine whether a similar condition can be expected to occur at any time during the harvesting season.

## Sucrose and Quality Losses

*Unburned Cane.* The deterioration characteristics of sound unburned mill cane will be reviewed here only briefly, since these have been extensively studied in Louisiana and reported upon several times (7)(8)(9)(10). Summarizing then, the normal and principal chemical change which occurs in such sugarcane during storage is a transformation of sucrose to reducing sugars ("glucose") by some unknown physiological process. There is a slow, scarcely detectable, consumption of sugars through respiration and a gradual and small increase in soluble nonsugars while the cane is held in storage. (Any change in the content of other constituents is usually associated with a loss or gain of moisture from the cane, gain resulting from extremely wet storage conditions.)

The most important factor controlling inversion of sucrose in sound cane during storage under Louisiana conditions is moisture balance. Temperature is of secondary importance. In general, if loss of moisture is prevented by ap-

(Continued on page 45)

# MINIMUM WAGE REQUIREMENTS FOR HARVESTING THE 1948 LOUISIANA SUGARCANE CROP

UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration

The U. S. Department of Agriculture announced on October 18th that minimum wage rates to be paid for harvesting the 1948 crop of sugarcane by producers in Louisiana who apply for payments under the Sugar Act of 1948 will be geared to an average two weeks' price of raw sugar at New Orleans (duty paid basis).

When the average price ranges between $5.60 and $6.25 per 100 pounds, the rates will be the same as during the 1947 harvest. For each full 10 cents that the average price for a two weeks' period is above $6.25 or below $5.60, the time rates will be increased or decreased 6½ cents per day while piece work rates move similarly in a range from ½ cent to 4 cents per ton depending on the operation.

Department officials stated that a modified wage-price escalator scale is being used in the 1948 determination so that wage rates "will be more responsive to significant changes in prices and producer income than was possible under the fixed wage levels of the 1947 determination."

Officials stated further that in this year's program "it will be the responsibility of each producer to ascertain the average price of sugar and the effective wage rates in order to be sure the proper rates are being paid. This information will be available in the Louisiana State and Parish PMA offices of the U. S. Department of Agriculture."

In the wage rate determination announced October 18th, the piece work rates have been reduced 15 cents per ton for all harvesting operations except loading. The rate for cutting top and bottom, and stripping small barrel sugarcane is $1.65 per ton compared with $1.80 in 1947. This reduction in piece work rates has been made to establish a more reasonable relationship between the earnings rate of workers on piece work and those on a time basis. At the rates established October 18th, an average worker should earn about $5.25 per 9-hour day if employed on a piece work basis as compared with $3.50 per day if employed on a time basis.

The Sugar Act provides, among other conditions of payment to growers, that all persons employed on a farm in the production, cultivation, or harvesting of sugarcane be paid in full by growers at rates not less than those determined by the Secretary of Agriculture to be fair and reasonable after public hearing and investigation. A public hearing was held on July 22, 1948, at Thibodaux, Louisiana.

The determination for 1948 also provides, as in former years, that the grower must furnish to the laborers without charge the incidentals customarily furnished, such as a habitable house, medical attention, and similar items.

*DETAILED INFORMATION*: The wage rates in effect on 1948-crop Louisiana sugarcane when the average price of raw sugar (duty paid basis) at New Orleans is between $5.60 and $6.25 per 100 pounds, inclusive, and the adjustments for each full 10 cent change in sugar price are as follows:

(a) The wage rates agreed upon between a producer and a laborer but in no case less than the rates prescribed under the following paragraphs b, c, and d.

(b) *Adult males and adult females employed on a time basis.*

| | | Per day of 9 hours |
|---|---|---|
| (1) | Cutting, topping, stripping | |
| | Adult males | $3.50 |
| | Adult females | 3.05 |
| (2) | Loading | 4.15 |
| (3) | Cutting and loading | 3.70 |
| (4) | Tractor drivers and truck drivers | 4.25 |
| (5) | Teamsters | 4.05 |
| (6) | Hoist operators | 3.70 |
| (7) | Operator of mechanical loading or harvesting equipment | 4.60 |
| (8) | Pilers | 3.70 |
| (9) | Grabmen, spotters, ropemen | 4.15 |
| (10) | Scrappers | 3.50 |
| (11) | Any other work connected with harvesting | 3.05 |

## Wage Rates Applicable to Persons Employed in the Harvest of the 1948 Crop of Sugarcane in Louisiana on a Piece Work Basis

**Wage Rate Per Ton**

| Average Raw Sugar Price Per Hundred Pounds (Duty Paid Basis) | | Cutting top and bottom and stripping | | Cutting top and bottom | | Loading | | Cutting top and bottom, stripping and loading | | Cutting top and bottom and loading | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Large Barrel | Small Barrel | Large Barrel | Small Barrel | Large Barrel | Small Barrel | Large Barrel | Small Barrel | Large Barrel | Small Barrel |
| At Least | But Not More Than | Per Ton | Per Ton | Per Ton | Per Ton | Per Ton | Per Ton | Per Ton | Per Ton | Per Ton | Per Ton |
| $6.950 | $7.000 | $1.525 | $1.860 | $ .955 | $1.190 | $ .475 | $ .600 | $2.000 | $2.460 | $1.430 | $1.790 |
| 6.850 | 6.949 | 1.500 | 1.830 | .940 | 1.170 | .470 | .590 | 1.970 | 2.420 | 1.410 | 1.760 |
| 6.750 | 6.849 | 1.475 | 1.800 | .925 | 1.150 | .465 | .580 | 1.940 | 2.380 | 1.390 | 1.730 |
| 6.650 | 6.749 | 1.450 | 1.770 | .910 | 1.130 | .460 | .570 | 1.910 | 2.340 | 1.370 | 1.700 |
| 6.550 | 6.649 | 1.425 | 1.740 | .895 | 1.110 | .455 | .560 | 1.880 | 2.300 | 1.350 | 1.670 |
| 6.450 | 6.549 | 1.400 | 1.710 | .880 | 1.090 | .450 | .550 | 1.850 | 2.260 | 1.330 | 1.640 |
| 6.350 | 6.449 | 1.375 | 1.680 | .865 | 1.070 | .445 | .540 | 1.820 | 2.22 | 1.310 | 1.610 |
| 6.251 | 6.349 | 1.350 | 1.650 | .850 | 1.050 | .440 | .530 | 1.790 | 2.180 | 1.290 | 1.580 |
| 5.600 | 6.250 | 1.350 | 1.650 | .850 | 1.050 | .440 | .530 | 1.790 | 2.180 | 1.290 | 1.580 |
| 5.501 | 5.599 | 1.350 | 1.650 | .850 | 1.050 | .440 | .530 | 1.790 | 2.180 | 1.290 | 1.580 |
| 5.401 | 5.500 | 1.325 | 1.620 | .835 | 1.030 | .435 | .520 | 1.760 | 2.140 | 1.270 | 1.550 |
| 5.301 | 5.400 | 1.300 | 1.590 | .820 | 1.010 | .430 | .510 | 1.730 | 2.100 | 1.250 | 1.520 |
| 5.201 | 5.300 | 1.275 | 1.560 | .805 | .990 | .425 | .500 | 1.700 | 2.060 | 1.230 | 1.490 |
| 5.101 | 5.200 | 1.250 | 1.530 | .790 | .970 | .420 | .490 | 1.670 | 2.020 | 1.210 | 1.460 |
| 5.001 | 5.100 | 1.225 | 1.500 | .775 | .950 | .415 | .480 | 1.640 | 1.980 | 1.190 | 1.430 |
| 4.901 | 5.000 | 1.200 | 1.470 | .760 | .930 | .410 | .470 | 1.610 | 1.940 | 1.170 | 1.400 |
| 4.801 | 4.900 | 1.175 | 1.440 | .745 | .910 | .405 | .460 | 1.580 | 1.900 | 1.150 | 1.370 |

### NOTES

The following price and wage periods will be used during the 1948 sugarcane harvest season:

| Two Week Period During Which Average Price of Raw Sugar is Determined | Two Week Period During Which the Above Rates are in Effect |
|---|---|
| Fri. Sept. 24—Thurs. Oct. 7 | Mon. Oct. 18—Thurs. Oct. 21 |
| Fri. Oct. 8—Thurs. Oct. 21 | Fri. Oct. 22—Thurs. Nov. 4 |
| Fri. Oct. 22—Thurs. Nov. 4 | Fri. Nov. 5—Thurs. Nov. 18 |
| Fri. Nov. 5—Thurs. Nov. 18 | Fri. Nov. 19—Thurs. Dec. 2 |
| Fri. Nov. 19—Thurs. Dec. 2 | Fri. Dec. 3—Thurs. Dec. 16 |
| Fri. Dec. 3—Thurs. Dec. 16 | Fri. Dec. 17—Thurs. Dec. 30 |

(All dates are inclusive)

If the average price of raw sugar is above $7.00 or below $4.801 per hundred pounds, consult the parish office for applicable wage rates.

For a working day longer or shorter than 9 hours, the above rates shall be divided by 9 and the resulting hourly rate applied to the number of hours worked.

(c) *Workers between 14 and 16 years of age when employed on a time basis.* For workers between the ages of 14 and 16 years, the rate per day of 8 hours (maximum hours per day for such workers) shall be not less than three-fourths of the applicable rate established under paragraph b for adult male workers for a 9-hour day. For a working day shorter than 8 hours, the rate shall be in proportion.

(d) *All workers when employed on a piece work basis.*

| | | Rate per ton Large barrel varieties* | Small barrel varieties* |
|---|---|---|---|
| (1) | Cutting top and bottom, and stripping | $1.35 | $1.65 |
| (2) | Cutting top and bottom | .85 | 1.05 |
| (3) | Loading | .44 | .53 |
| (4) | Cutting, top and bottom, stripping and loading | 1.70 | 2.18 |
| (5) | Cutting top and bottom and loading | 1.29 | 1.58 |

*Large barrel varieties shall include: Co. 290; C.P. 29/103; C.P. 29/116; C.P. 33/243; C.P. 36/13; C.P. 36/105; and C.P. 29/120. All other varieties shall be classed as small barrel.

The piece rate for any operation specified above when performed on a unit basis other than a ton unit, or the piece rate for any operation not specified above, shall be that agreed upon between the producer and the laborer: *Provided, however,* That the hourly rate of earnings of each worker, for the time involved, shall be not less than the applicable hourly rate specified in paragraphs (b) or (c) hereof.

*Wage Increases or Decreases.*

The Louisiana Production and Marketing Administration will announce the average price of raw sugar during two week periods. For each full 10 cents that the average price of raw sugar is above $6.25 or below $5.60 per 100 pounds of sugar, the wage rates will be increased or decreased in the following amounts and the rates shall be effective for all work performed during the two weeks' period for which the average price is determined:

Time Basis: 6½ cents per 9 hour day

Piece-work basis:

| | Cents Per Ton Large Barrel | Small Barrel |
|---|---|---|
| Cutting top and bottom, and stripping | 2½ | 3 |
| Cutting top and bottom | 1½ | 2 |
| Loading | ½ | 1 |
| Cutting top and bottom, stripping and loading | 3 | 4 |
| Cutting top and bottom and loading | 2 | 3 |

Wages during the period from 12:01 a.m., Oct. 18, 1948, to 12:00 midnight October 21, 1948, will be geared to the average price of sugar during the period from September 24 through October 7, 1948. Thereafter, wage rates during two-week work periods will be tied to the preceding two weeks average price of raw sugar.

# CROP NEWS BY PARISHES

## from

## COUNTY AGENTS

The beginning of another Louisiana grinding season has ushered in a new season of speculation as to the prospective productions of cane and sugar in the various parishes over the sugar belt. In order to keep the readers of THE SUGAR BULLETIN informed about the developments over the territory we endeavored to get for this issue some thoughts from our friends, the County Agents, regarding the size of the crop in their respective districts. Up to this writing not many of the agents have answered our questionnaire but we attribute this to the late start of grinding operations in most places. We hope to be able to pass on a more complete report in our November 15th issue.

**West Baton Rouge Parish.** In a report dated October 24th, A. E. Camus advised us that the grinding campaign in West Baton Rouge Parish started on the 14th of October. The results ob-

(Continued on page 43)

# SUMMARY OF FERTILIZER TEST ON SUGARCANE IN 1947

*By Lester G. Davidson, Associate Chemist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.*

Field fertilizer tests were conducted on some of the major soil types used for sugarcane production in Louisiana, with the cooperation of the owners, managers, and overseers, on plantations at widely scattered locations in the sugarcane area. These field experiments were designed to compare the effects of different sources and rates of application of nitrogen, and the effects of nitrogen alone as compared to nitrogen plus phosphate or potash or both, on yields of cane and sugar and on juice quality.

A test with C.P. 34/120 plant cane on Yazoo soil in West Baton Rouge Parish, near Lobdell, was designed to compare the effects of nitrogen alone with mixed fertilizers. Twenty-four pounds of nitrogen, alone, and with equal amounts of phosphate or of potash, and of both, produced approximately equal yields of cane, averaging tons per acre as compared to the un- 13.6 tons per acre, an increase of 3.3 tons per acre as compared to the unfertilized controls. Mixtures supplying 36 pounds of nitrogen plus equal amounts of phosphate or potash or both gave approximately the same yields of cane as was obtained with 36 pounds of nitrogen alone, averaging 16 tons per acre. Sixty pounds of nitrogen alone produced 17.3 tons of cane per acre, as compared to 19.3 tons for the 60-60-60 (Pounds of N, $P_2O_5$ and $K_2O$ per acre, respectively) treatment. The percent sucrose was not appreciably affected by any of the treatments used.

An experiment with C.P. 34/120 plant cane on Yazoo soil in Lafourche Parish, between Thibodaux and Labadieville, was designed mainly to compare the effects of 36 pounds of nitrogen alone with mixtures supplying 36 pounds of nitrogen plus 18, 36, and 72 pounds of phosphate, and 36 pounds of nitrogen plus 18, 36, and 72 pounds of potash. Mixtures supplying 60 pounds of nitrogen, alone, and with equal quantities of phosphate or potash or both, were included in the test. All mixtures supplying 36 pounds of nitrogen, with or without phosphate or potash produced approximately equal yields of cane, averaging 14 tons per acre as compared to a yield of 11.5 tons from the unfertilized controls. Approximately equal yields of cane were obtained from the 60-60-60 and the 96-0.0 treatments, averaging 18.2 tons per acre. The yield from the 60-0-0 treatment was 16.8 tons per acre. The percent sucrose was not appreciably affected by any of the treatments used.

A similar experiment was conducted with Co. 290 and C.P. 34/120 on Yazoo soil in Lafourche Parish, near Thibodaux. Yields from all treatments supplying 36 pounds of nitrogen, with or without phosphate or potash or both, did not differ appreciably, and averaged 17.9 tons cane per acre for C.P. 34/120, as compared to 16 tons per acre from the unfertilized controls, and 20.3 tons per acre for Co. 290, as campared to 16.7 tons per acre from the unfertilized controls. The 96-0-0 treatment produced a yield of 22.7 tons cane per acre in both varieties.

The effect of nitrogen alone and mixed fertilizers was compared in a test with C.P. 33/243 first stubble cane on Yazoo soil in Lafourche Parish between Thibodaux and Labadieville. Yields from the 24-0-0, 36-0-0, 60-0-0 and 96-0-0 treatments amounted to 21, 25, 27 and 30 tons cane per acre, respectively, as compared to 14 tons per acre from the unfertilized controls. Approximately equal yields of cane were obtained where equal quantities of phosphate or potash or both were used with the nitrogen. The percent sucrose was not appreciably affected, except by the 96-96-

96 treatment, which reduced the percent sucrose in the crusher juice by .6% as compared to the unfertilized controls.

A test with C.P. 29/120 second stubble cane was conducted on Yazoo soil in Lafourche Parish, near Raceland. In this test the percent sucrose was not reduced by the use of as much as 60 pounds of nitrogen per acre, but the use of 86 pounds of nitrogen per acre reduced the sucrose in the crusher juice by .4%. With the use of 24 and 36 pounds of nitrogen, yields of cane amounted to 16 and 18.5 tons per acre, respectively, as compared to 14.3 tons from the unfertilized controls. Sixty pounds of nitrogen per acre, from nitrate of soda, cyanamid, ammonium nitrate, and aqua ammonia, produced approximately equal yields of cane, averaging 20.3 tons per acre. The use of 60 pounds of nitrogen plus an equal amount of phosphate or potash or both did not appreciably affect yield as compared to 60 pounds of nitrogen alone. The 96-0-0 treatment produced a yield of 25.7 tons cane per acre.

A test with C.P. 34/120 plant cane on Sharkey soil was conducted in West Baton Rouge Parish, near Cinclare. Yields of cane per acre and percent sucrose were not appreciably affected by the use of 24, 36, 60, or 96 pounds of nitrogen alone, or with equal quantities of phosphate or potash or both.

Four sources of nitrogen, and nitrogen alone versus complete mixtures, were compared in a test with C.P. 36/13 plant cane on Sharkey soil in Terrebonne Parish, near Houma. Approximately equal yields of cane were obtained from the use of 36 pounds of nitrogen from ammonium nitrate, sulfate of ammonia, cyanamid and nitrate of soda, averaging 23.8 tons per acre as compared to 21.6 tons per acre from the unfertilized controls. No further yield increase was obtained from the use of 48 or 60 pounds of nitrogen, either alone or in complete mixtures. Approximately equal yields of cane and sugar were obtained from the 96-0-0 and the 96-96-96 treatments, which averaged 26.3 tons of cane per acre.

An experiment with C.P. 34/139 plant cane was conducted on Sharkey soil in Assumption Parish, near Labadieville. The yield of cane from the unfertilized controls amounted to 13.4 tons per acre. Thirty-six pounds of nitrogen produced a yield of 17.4 tons of cane per acre. Only slightly higher yields were obtained from (fertilizer) mixtures supplying 36 pounds of nitrogen and 18 to 36 pounds of phosphate or potash or both. Sixty pounds of nitrogen produced a yield of 21.9 tons cane per acre. (Fertilizer) mixtures supplying 60 pounds of nitrogen and 30 to 60 pounds of phosphate or potash or both produced approximately the same yields as were obtained from 60 pounds of nitrogen alone. The percent sucrose was not appreciably affected by any of these fertilizer treatments.

The same fertilizer treatments were used in a test on Sharkey soil with C.P. 34/92 first stubble cane on the same plantation. The yield of cane from the unfertilized controls was 13.1 tons per acre. Thirty-six pounds of nitrogen produced a yield of 16.6 tons of cane per acre. Slightly higher yields were obtained from the use of (fertilizer) mixtures supplying 36 pounds of nitrogen and 18 to 36 pounds of phosphate or potash or both. Sixty pounds of nitrogen produced a yield of 19.8 tons cane per acre. (Fertilizer) mixtures supplying 60 pounds of nitrogen and 30 to 60 pounds of phosphate or potash or both produced approximately the same yields as were obtained from the use of 60 pounds of nitrogen alone. The percent sucrose was not appreciably affected by the use of any of these fertilizer treatments. In a test with C.P. 34/120 first stubble cane on Sharkey soil in Lafourche Parish, between Thibodaux and Labadieville, cyanamid and sulfate of ammonia proved equally valuable as fertilizers when compared at the 24, 36, 60 and 96 pound rates of application of nitrogen. Rates of 24 and 36 pounds of nitrogen produced equal yields of cane, amounting to 15.2 tons per acre, as compared to 12.2 tons from the unfertilized controls, while 60 and 96 pounds of nitrogen produced yields of 16.5 and 20.3 tons of cane per acre, respectively.



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At all four rates of application of nitrogen, the use of equal amounts of phosphate or potash or both with the nitrogen did not appreciably affect the yields of cane or sugar per acre. None of the treatments used had any appreciable effect on the percent sucrose in the crusher juice.

An experiment with C.P. 29/116 first stubble cane on Franklin soil in St. Mary Parish, near Franklin, was designed to compare the effects of aqua ammonia, ammonium nitrate, and sulfate of ammonia, when applied at the rate of 56 pounds of nitrogen per acre. The yield of cane and the percent sucrose were slightly lower from the aqua ammonia treatment, as compared to the other two sources of nitrogen, but the differences were very small and it is believed that these 3 sources of nitrogen are equally valuable as sugarcane fertilizers.

In a test with Co. 290 first stubble cane on Franklin soil in St. Mary Parish near Franklin, 3 rates of application of nitrogen, 3 of phosphate, and 3 of potash were used in all possible combinations, making a total of 27 fertilizer treatments. Plots receiving no nitrogen produced an average yield of 12 tons of cane per acre, as compared to 19.5 tons per acre from the plots receiving 36 pounds of nitrogen per acre. No further yield increase was obtained by the use of 60 pounds of nitrogen per acre. The use of 24 to 48 pounds of phosphate or potash or both, with the nitrogen, had no appreciable effect on the yield of cane or sugar per acre. None of the treatments used appreciably affected the percentage of sucrose.

The same 27 fertilizer treatments were used in a test with C.P. 34/120 first stubble cane on Iberia soil in St. Mary Parish, near Jeanerette. None of the fertilizer treatments used had any appreciable effect on the yields of cane or on the percentage of sucrose in the crusher juice.

Results from these fertilizer tests are in general agreement with previous results obtained on the Yazoo, Sharkey, Franklin soils.

The average results on Yazoo soil indicate that plant cane usually shows a profitable yield increase from the use of up to 36 pounds of nitrogen per acre in the southern half of the cane area; usually little response is obtained in the northern half. In stubble cane, 36 to 60 pounds of nitrogen will usually produce substantial increases in yields of cane and sugar per acre. The average results indicate that the yields of cane and sugar per acre are not significantly affected by the use of phosphate or potash, or both, with the nitrogen.

The average results on Sharkey soil indicate that the use of up to 60 pounds of nitrogen per acre will usually result in substantial increases in the yields of cane and sugar per acre, for both plant and stubble cane. Yields were not affected by the use of phosphate or potash, or both, with the nitrogen.

The average results on Franklin soil indicate that while 36 pounds of nitrogen per acre are sufficient for plant cane, at least 60 pounds per acre may be used profitably on stubble cane. The use of phosphate or potash, or both, with the nitrogen did not significantly affect yields of cane or sugar per acre.

The average results from a limited number of tests on Iberia and Lintonia soils indicate that 36 pounds of nitrogen are sufficient for plant cane, but that up to 60 pounds may be used profitably on stubble cane. In some experiments response to phosphate or potash, or both, has been obtained, but in most tests the major portion of the yield increase has been obtained from nitrogen.

## UREAFORM TAKES OUT THE CAKE

Continuing research reveals another highly desirable quality in the new slow-acting nitrogen fertilizer that is being developed by USDA workers under the name of ureaform. The material has an unusual capacity for taking up water from the atmosphere without caking or ceasing to be a free flowing powder. Thus, the experimenters find that urea-form can be mixed with other fertilizers and that it will act as a "conditioner" and check

the caking of such a mixture. Even when stored at 100 percent relative humidity, one urea-form product remained dry and powdery, although it absorbed moisture enough to increase its weight by nearly a third. Even then, it was possible to add some fluid water without checking its free flow.

Preliminary tests show that urea-form can be added to some of the chemical fertilizers that tend to cake. As little as 5 per cent of urea-form makes a decided improvement in the free flowing quality of the mixture. Free flow is particularly important in the fertilizers that are applied by modern machines that leave a band of fertilizer in the soil a little below and to the sides of the row where the seeds are planted.

In still other field tests, the combination of urea-form with a quick acting nitrogen fertilizer showed promising results. In fertilizing grasses, the quick acting fertilizer in the mixture would get the grasses off to a quick start in spring, but without the urea-form the yield would taper off later in the season. The slowly soluble urea-form added to the quick acting fertilizer would give a continuing supply of nitrogen through the season and the total yield would be larger and spread over a long season of growth.

The name urea-form, applies to a whole series of products. The research shows that strict control of the chemical reaction is necessary. Variation in the proportions of urea and formaldehyde cause variations in the form of the product and its solubility. With an excess of formaldehyde the product becomes too insoluble for fertilizer use.

## CROP NEWS

(Continued from page 39)

tained up to October 24th have been good and Mr. Camus expects the sugar production in his district to be about twenty percent larger than that of last season. The canes are cutting about 20 tons to the acre and the average sucrose results have been around 11.50 per cent. The labor supply in West Baton Rouge Parish is barely sufficient and more labor could be used to advantage.

**St. Charles Parish.** A. J. Melancon, Jr., reported on October 23rd that grinding operations were not scheduled to begin in St. Charles Parish until the first of November. Mr. Melancon expects the production of sugar in his district to be about 10% larger this season than last season. He, too, reports the labor supply as only barely sufficient.

**Terrebonne Parish.** From Terrebonne Parish, Richard Sonnier reported on October 26th that grinding operations began in his district on October 15th. The canes are averaging about 18 tons to the acre and Mr. Sonnier expects the sugar production this year to be about 15% greater than that of last season. The labor supply in Terrebonne Parish is also just barely sufficient.

**Lafourche Parish.** The grinding campaign got under way in Lafourche Parish on October 15th, according to a report from A. C. Moreau dated October 24th, with the canes cutting anywhere from 11 to 18 tons to the acre and the sucrose ranging from 9.5 to 12.5 per cent. The labor supply in Lafourche Parish is short.

**Iberia Parish.** W. E. Williams has favored us with a special report on the condition of the crop in Iberia Parish. His report is dated October 26th and is as follows:

Actual grinding of the 1948 sugarcane crop got underway in Iberia Parish today. Vida Sugar Co., Loisel Sugars, Inc., and Duhe & Bourgeois being the first mills to actually start grinding. According to a survey made Monday and Tuesday of this week, all the different mills of the parish should be grinding by the end of the week.

Vida Sugar Co., Loisel Sugar Co., and Duhe & Bourgeois Sugar Co. started taking cane Monday, October 25 and began actual grinding today. Iberia Sugar Coop. started taking cane Monday and plans to start grinding Wednesday morning, October 27. Patout Sugar Co. started taking cane Tuesday and expects to start actual grinding Wednesday or Thursday. Orange Grove Sugar

Co. plans to start taking cane Friday of this week and will start actual grinding as soon as enough cane is accumulated in the yards.

According to sucrose tests being made at the various mills the average test for cane at this time of the year is relatively low running between 10½% to 12% depending on varieties. Tests in the eastern part of the parish seem to be slightly better than those in the western part of the parish.

At the present time indications are that the 1948 sugarcane tonnage produced by Iberia Parish farmers for sugar and syrup purposes will be slightly under the total tonnage produced in 1947. In that year farmers marketed a total of 486,094 tons for sugar and syrup purposes.

The reason for the decrease in expected tonnage is the fact that the total acreage devoted to sugarcane this year is a little over 3,000 less than the acreage devoted to that crop in 1947.

At present indications are that our per acre production will be about 2 tons higher than 1947. Nevertheless, the reduction in acreage will reflect a reduction in total tonnage produced according to the County Agent's estimate.

Cane is growing nicely at present as a result of recent rains. However, additional showers would be beneficial now. Most all farmers of the parish have completed the planting of their 1949 crop.

**St. James Parish.** The grinding campaign in St. James Parish began on October 18th and Joseph Lamandola advised us in a report dated October 25th that the results obtained up to the 25th were fair. Present prospects indicate that the sugar production in St. James Parish will be about 10 per cent larger this year than it was last season. The canes are cutting about 18 tons to the acre and the sucrose is averaging about 11.3 per cent. Mr. Lamandola reports the labor supply as ample. He states that rain is needed for the planted cane.

**St. John Parish.** V. O. Calandro advised us in a report dated October 28th that milling operations began in St. John Parish on October 19th with fair results. Harvesting has been confined thus far to the stubble crop and these canes were cutting about 15 tons to the acre and averaging about 12 per cent in sucrose. Mr. Calandro states that the labor supply in his district is barely sufficient. Godchaux's big Reserve mill began grinding on October 21st. Sugar production prospects in St. John Parish are estimated at about 10 per cent greater than that of last season.

## Sugar Price Control Records

The U. S. Department of Agriculture has announced a requirement for the preservation until October 31, 1950 of sugar price control records by specified categories of persons. Previously, it had been announced that all price control records could be destroyed after October 31, 1948.

The requirement announced on October 25th is contained in Amendment 1 of General Order 9 of the Sugar Rationing Administration, which order was issued by the Acting Secretary of Agriculture on July 30, 1947. It applies only to persons who (1) are parties to pending civil or criminal litigations, (2) have received any sugar subsidy, premium or other payment from the United States Government under a price adjustment provision.

The records to be preserved include all documents, reports, books, accounts, invoices, sales lists, sales slips, orders, vouchers, contracts, receipts, bills of lading, correspondence, memoranda, and drafts and copies, which were required to be made or kept on March 31, 1947.

## THE MARKETS

The official Louisiana marketing season began on October 8th and since that time spot sales of Louisiana raw sugar have been recorded only twice, on October 15th and again on October 18th, at 5.55 cents per pound, delivered New Orleans.

The sugar market, however, has shown a tendency to strengthen and,

because of the new rules governing raw sugar quotations adopted this year by the Cane Products Trade Association and the Louisiana Sugar & Rice Exchange, the advances registered in the price of raw sugar since the Louisiana spot sales were made have been reflected in the daily and weekly average prices issued by the two organizations.

It will be recalled that in former years Louisiana raw sugar quotations were based entirely on the spot sales of Louisiana raw sugar with changes in the daily quotations occurring only when Louisiana transactions were recorded. This system resulted in the carrying over from day to day of the last previous Louisiana sale even though changes in the raw sugar market were taking place in New York.

This season the exchanges are using the New York daily spot raw sugar quotation of Willett & Gray, Inc., adjusted to a New Orleans basis, on the days when no spot sales of Louisiana raws are recorded. This change allows the two pricing organizations to accurately reflect the value of raw sugar in their daily and weekly quotations. *An example of what this means to the Louisiana sugar industry is shown in the fact that as we go to press on October 28th the official Louisiana price is* 5.63 *cents per pound although the last spot sale of Louisiana raw sugar was at* 5.55 *cents per pound.*

Incidentally the Cane Products Trade Association and the Louisiana Sugar & Rice Exchange are cooperating in sending a joint wire each week advising the Sugar Branch of the Production and Marketing Administration of the daily and weekly Louisiana quotations. The quotations of these two organizations for the three weeks completed thus far in the new marketing period have been 5.55 for the week ending October 14th, 5.58 for the week ending October 21st, and 5.63 for the week ending October 28th.

---

The first sale of new crop Louisiana Blackstrap Molasses was recorded on October 18th at a price of 18 cents a gallon, in bulk f.o.b. plantation, and two other sales occurred on October 20th at 17 cents a gallon. Since that time no more spot transactions in blackstrap have been registered.

No quotation was issued on blackstrap molasses for the first week of the marketing season ending October 14th because of the absence of sales, but the exchanges quoted this product at 17½ cents a gallon in their weekly average prices for the week ending October 21st and at 17 cents a gallon in the average for the week ending October 28th.

---

## MILLING LOSSES

(Continued from page 36)

propriate means, inversion proceeds at a minimum rate and, conversely, drying out of the cane promotes deterioration, with the rate of deterioration usually accelerated by an increase in the rate of drying. There is a large difference among varieties in the rate and amount of their deterioration when they are stored under drying conditions. But all varieties seem to become more resistant toward deterioration with the advance of the harvesting season. The processes which cause this to be so have not yet been established.

Table 1 lists the more important varieties of sugarcane now being grown commercially in Louisiana, including those rather recently released, in respect to their comparative rates of deterioration. The ratings were determined on sound, unburned, clean mill cane stored under shelter with moderate drying conditions.

**TABLE 1. Relative Inversion Rating of Commercial Sugarcanes**

| Low | Medium Low | Medium High | High |
|---|---|---|---|
| Co. 281 | Co. 290 | C.P. 29/120* | C.P. 29/103 |
| (standard) | C.P. 29/116 | C.P. 33/425 | C.P. 29/320 |
| C.P. 36/13 | C.P. 34/120 | C.P. 34/92 | C.P. 33/243 |
| | | | C.P. 33/310 |
| | | | C.P. 36/19 |
| | | | C.P. 36/183 |

* C.P. 29/120 has a rating about midway between the Medium Low and Medium High groups of varieties.

It is worth noting that varieties that will deteriorate rapidly under drying conditions are in the majority. Unfortunately, there is no formula that can be applied to estimate the degree of deterioration which results from delayed milling of harvested sugarcane. Although

there may be a temporary rise in apparent sucrose due to loss of moisture if the rate of deterioration is not too rapid, it can be misleading because, often, there is actually a loss of recoverable sugar due to a decrease in juice purity. In the early part of the season, it is believed that one can expect a drop in juice purity of 1 to 2 points per day in case of the varieties listed in the first two columns and a drop of 2 to 4 points in the remaining varieties, especially after the first day of storage in heap rows under field conditions. After cool weather sets in, a reduced rate of deterioration can be expected, but the rate usually remains serious enough with many of the varieties that their milling should not be delayed.

*Burned Cane.* Removing trash by burning has introduced another threat to quality which is probably not fully realized by all who have adopted the practice. The heat of the fire injures the stalks to an extent that their ability to carry on many of their normal physiological processes and to ward off invasion by microorganisms has been destroyed or badly impaired. But this type of injury is not visible and is not therefore easily recognized.

Deterioration of burned cane is thus a combination of conditions caused by the natural processes and of that caused by the invasion of microorganisms. The condition which is most favorable for keeping sound cane, namely high humidity, unfortunately favors the growth of microorganisms; while the dry conditions which retard the growth of microorganisms promote deterioration by natural causes. Because burning depresses the latter, it frequently happens that burned cane keeps better than unburned cane for awhile, under drying conditions. In practice, it is customary to allow the leaves on cut cane to dry sufficiently for burning. The period may be a few hours to a day or more and within this period some deterioration from natural processes may result. Burning checks this deterioration but sets the stage for action by microorganisms. After a few days, when the microorganisms have had a chance to become established, the rate of deterioration makes a very rapid increase and soon overcomes the early advantage. Microorganisms which in due time predominate appear to be the same ones encountered in frozen cane-bacteria responsible for gum and acetic acid formation and yeasts, both of which develop at the expense of sugars, particularly of sucrose.

Temperature plays a more important role in deterioration of burned than of unburned cane because of its pronounced effect on the growth of microorganisms. During the warmer part of the harvesting season and under moist conditions, burned cane in less than a week will "sour" to the extent that its juice cannot be clarified, by the usual method, for laboratory analysis. These "sour" juices would be very difficult to process.

As the season progresses, sugarcane seems to increase its resistance toward fire injury in addition to its resistance toward deterioration from natural processes already mentioned. This phase

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requires further study, however, to determine whether the correct interpretation has been made of results obtained so far.

## Conclusion

It is obvious from these findings that burning cut cane for trash removal can easily create serious deterioration problems if milling is delayed appreciably. Unfortunately, delay most often occurs during rainy weather, when hauling is difficult, and such weather favors the growth of microorganisms. Burned cane should be kept as dry as possible at all times if it must be held in temporary storage. This warning also applies to pile storage at factories. Burned cane in piles should *not* be sprinkled although this practice is recommended for unburned cane.

There is no sure or safe way of keeping burned cane very long without deterioration. The only solution lies in prompt milling of cut cane, both burned and unburned. Every effort should be made to mill harvested, burned cane within 2 days after cutting during the early part of the season but a somewhat longer lag during the late part of the season can be tolerated. The stakes are high and very worth-while and it is believed the problem can and will, eventually, be solved through education, cooperation, and patience.

[1] Agricultural Chemical Research Division Contribution No. 238.

[2] One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture.

[3] Bureau of Plant Industry, soils, and Agricultural Engineering, Beltsville, Md.

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# THE SUGAR BULLETIN

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# IN WASHINGTON WITH C. J. BOURG

*Basic Statement on Indicated Determination of* 1949 *Consumption requirements Included In Brief Filed for American Sugar Cane League at Hearing on Nov.* 15*th.*

Deliveries for consumption, November 1, 1947 to October 31, 1948 (as published by the Sugar Branch, P&MA).....7,117,000

Allowance for deficiency or surplus in inventory (Sugar Reports show "quota" stocks on October 31, 1948 were 545,000 tons, *vs.* 421,000 tons in 1947. Visible stocks, therefore, appear to exceed the 1947 level by 120,000 tons. The readiness with which sugar has been available in the market indicates that industrial users, wholesalers, and retailers have been able to buy all the sugar they desired for invisible inventories. The October 31, 1948 invisible stock situation, therefore, appears to be such as to require no adjustments).—Minus.... ..... 120,000

Preliminary Total .....6,997,000

*Changes in Population*

(The Bureau of the Census computes the mid-year population at 146,571,000 in 1948; 144,002,000 in 1947; and 141,229,000 in 1946. On the basis of these trends, it is computed that the increase from 1948 to 1949 will be approximately 2,300,000 or 1.57%. This percentage, applied to 6,997,000 tons (7,117,000 minus 120,000) provides an allowance of 110,000 tons.—Plus ..... 110,000

7,107,000

*Changes in Demand Conditions*

(The Demand Price Situation, published by BAE, summarizes the demand situation by stating "no marked reduction in consumer incomes and the domestic demand for farm products generally can be foreseen for the immediate future". Consequently, no allowance for change in demand seems appropriate at this time)..... None

Allowances for the relationship between the cost of living and the wholesale refined sugar price. (The above computations result in a figure of 7,107,000 tons. It is believed that this figure will restore a substantial part of the sugar prices which have been below the level indicated by the living-cost-sugar-price relationship. Consequently, no additional allowance for this relationship would seem to be required under these conditions. However, should the allowance for excess stocks be more or less the 120,000 tons above indicated, a corresponding allowance would be required hereunder) ..... None

Net consumption estimate .....7,107,000

**(Continued on Page 58)**

# MINOR FACTORS AFFECTING PROFITS ON SUGAR CANE FARMS IN LOUISIANA

*J. P. Gaines and J. Norman Efferson*

Detailed farm management and cost studies of the operation of family-type sugar cane farms in Louisiana have been conducted by the Department of Agricultural Economics of the Louisiana Agricultural Experiment Station annually since 1938.[1] About 500 records are collected each year and the same general methods of collecting and analyzing the data are employed in order to make the results from year to year directly comparable.

The results of these studies have shown that in any given year under the same climatic conditions and the same price structure, there are still large variations from farm to farm in costs, returns, and net profits. The factors causing one producer to have lower costs and higher returns than another in the same area and in the same year are both physical and economic in character. The physical factors include selection of varieties; disease and insect control; methods of planting, cultivating, fertilizing, and harvesting, and many others. The economic factors include the wide range of managerial operations and decisions during the operation of a farm. The nature of the data collected on the Louisiana sugar cane farms has been such that no accurate analysis of the physical factors affecting farm returns has been possible. Each year, however, a detailed study of the major economic factors important in determining farm returns has been made. These studies have shown that year after year the major economic factors affecting farm returns were the size of the farm business, the yield of sugar cane per acre, the proportion of the cropland planted to sugar cane, and the relative efficiency of the use of man labor.

In addition to these major economic factors affecting returns from sugar cane farming, it is recognized that there are many other factors which are important in determining the final returns at the end of the year. In an effort to evaluate the relative importance of some of these minor factors, the 1946 small family-type farm sugar cane records were coded and tabulated on punch-card equipment and a special study made of the relationship of certain minor factors to farm returns while the major factors were held relatively constant. The method of approach in this analysis was to group the records into major classes having fairly uniform averages as to major factors such as size of farm, yield per acre, and labor efficiency, and then to sub-sort these different groups according to the variation in minor factors. The more important results of this study are as follows:

## Age of the Farm Operator

Other things being equal, such as the size of farm and yield per acre, young farmers appear to have the advantage over the older aged groups in sugar cane farming. For the 503 family-type sugar cane farms studied in 1946, the general relationship was that on a given sized farm in a specific yield group, the farmers of less than 40 years of age averaged higher earnings than those of the age group of 60 years or more. In the small farm and low yield group, for instance, the labor earnings per farm averaged $534 for those of less than 40 years of age as compared with only $282 for those in the 60 years or more age group. In the large farm and high yield group, the labor earnings varied from $2173 per farm for the farmers of less than 40 years to $1819 for farmers who were 60 years old or older.

The most important reason for this variation in earnings by age groups appeared to be the more efficient use of labor made by the younger man. The farmers of less than 40 years of age maintained a larger acreage of sugar cane per man, operated a larger total acreage of crops per man, and had

(Continued on Page 59)

# LOUIS LeBOURGEOIS APPOINTED LOUISIANA BLACKSTRAP MOLASSES COORDINATOR

Culminating from a series of meetings of the Louisiana producers of Blackstrap Molasses, held under the auspices of the Blackstrap Molasses Committee of the American Sugar Cane League, a coordinated marketing program in cooperation with the Louisiana Department of Agriculture and the Federal Department of Agriculture has been worked out.

A Special Advisory Committee, selected by the producers and composed of Jules M. Burguieres, of Cypremort, George L. Billeaud, of Broussard, and J. J. Munson, of Houma, has selected Louis P. LeBourgeois, of New Orleans, to serve as coordinator and Mr. LeBourgeois has been appointed by W. H. Anderson, Louisiana Commissioner of Agriculture, to serve in that capacity as a State official under the Agricultural Marketing Act of 1946.

Up to the time of this writing approximately 70% of the anticipated Louisiana Blackstrap Molasses production has been signed up to participate in the new program and it is expected that more will come into the program within the next few days.

Mr. LeBourgeois has set up his headquarters in the office of the Cane Products Trade Association at 415 Whitney Building, New Orleans, and has begun his work of coordinating activities looking to the orderly distribution of the 1948 Blackstrap Molasses prdouction.

All of the information that Mr. LeBourgeois is able to assemble relative to the movement and marketing of Blackstrap Molasses will be available to all producers, brokers and distributors, with whom it is his intention to work very closely.

It is expected that a movement of this sort, supported as it is by a large majority of producers, will establish confidence and lead to an orderly movement of the Louisiana Blackstrap Molasses production.

*It has been very definitely announced that the coordinator will not sell Blackstrap Molasses for any producer and that brokerage and other selling arrangements will not be disturbed.*

The program has been outlined as follows:

1. The program is to be administered by a coordinator employed by the Louisiana Department of Agriculture, but selected and recommended by a three-man advisory committee of producers. This committee is composed of Jules M. Burguieres, of Franklin, La., J. J. Munson, of Houma, La., and George L. Billeaud, of Broussard, La., who shall serve in this capacity at the pleasure of the producers and until their successors may be selected by the producers. In the event of the death, resignation or inability to act of any one of said committeemen, the remaining two may select his successor.

2. The above committee will serve as a permanent advisory committee to advise and collaborate with the coordinator in administering the program.

3. The coordinator is specifically charged with the duty of performing all services deemed advisable in carrying out the purposes of the "Agricultural Marketing Act of 1946" in marketing Louisiana blackstrap molasses. Particularly, he shall:

(a) Endeavor to make arrangements to have stored and transported to storage, for the account of the producer, blackstrap molasses produced in excess of any producer's storage facilities.

(b) Confer and advise with producers as to all marketing problems and prospective sales.

(c) Obtain all information possible relative to the marketing of blackstrap molasses, particularly reports from Louisiana producers as to the price, quantity and delivery schedules of molasses marketed.

(d) Maintain constant contacts and coordination with molasses dis-

(Continued on Page 59)

# CROP NEWS BY PARISHES

## from

## COUNTY AGENTS

The reports that we have received for this issue of THE SUGAR BULLETIN indicate that the job of taking off the cane crop is progressing favorably with the canes cutting slightly heavier than early season reports indicated. Sucrose is about "normal" but purities are running generally low and the production of sugar is also below what it should be.

**Lafourche Parish.** A. C. Moreau reports that on November 9th the grinding operations in Lafourche Parish were progressing favorably with the canes cutting about 20 tons to the acre. The sucrose reports are averaging about 11½ per cent but purity is running between 70 and 75 per cent. Mr. Moreau estimates that the sugar production up to date of his report was averaging only about 130 pounds to the ton of cane.

Mr. Moreau is urging his farmers to cut and mill their cane as quickly as possible. The canes, he says, should be milled within 2 or 3 days after cutting for the best results to be obtained. If this is done, he says, it will help the growers in dollars and cents and will also help the factories do a better job.

**St. Landry Parish.** From St. Landry Parish, A. K. Smith, Jr., reports that the canes are averaging only about 15 tons to the acre in his district and that the sucrose is running low.

**St. Mary Parish.** The grinding campaign in St. Mary Parish is progressing favorably, according to a report dated November 9th from P. J. deGravelles, with the canes cutting about 17 tons to the acre. The sucrose is averaging between 11 and 11½ per cent, but, here too, purities are low with the test showing only 70 to 75 per cent. The production of sugar is averaging between 135 and 140 pounds to the tons of cane, which is considerably below what it should be.

**West Baton Rouge Parish.** Reporting on November 11th, O. E. Camus estimated that the grinding operations in West Baton Rouge Parish were about 33-1/3 per cent completed, which is all the proof that is needed that the grinding operations are progressing favorably in his district. Cane production is averaging about 20 tons to the acre, with the sucrose about 12 per cent and the purity around 76 per cent. The production of sugar per ton of cane was about 160 pounds. Mr. Camus explains that his figures are only approximate, and that some fields have produced better than 30 tons of cane to the acre.

The supply of labor in West Baton Rouge Parish is a little short even with the ideal weather that has been prevailing. The plant canes in his district, Mr. Camus says, are yielding better than was expected and he is hopeful that the production average this season will be 30% or more higher than it was last year.

**Pointe Coupee Parish.** A. B. Curet reported from Pointe Coupee Parish on November 9 that the grinding operations there were progressing fairly well and that the canes were averaging about 20 tons to the acre. The sucrose was running about 12½ per cent with purity about 78 per cent. The production of sugar was averaging about 158 pounds to the ton of cane.

In commenting on the general conditions Mr. Curet reports that the cane crop in his district is generally good, but it is generally thought that prices are too low to compensate the high costs of operations, particularly that of harvesting the crop.

**St. John Parish.** In a report dated November 9th, V. O. Calandro advised us that grinding operations in his district were progressing fairly well. He says that the canes in St. John Parish are cutting about 20 tons to the acre with sucrose around 12 per cent and

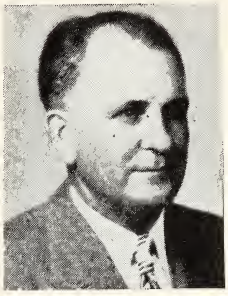
(Continued on Page 56)

# YOUR COUNTY AGENT REPORTS

## Iberia Parish Crop Reports as of November 8th

*by*

*W. E. Williams, County Agent*
*Iberia Parish, Louisiana*



MR. WILLIAMS

Grinding of the 1948 sugarcane crop got off to a rather poor start the latter part of October.

All six sugar mills of Iberia Parish have been operating since that time but not on a full time basis due to slow delivery of cane.

Most mills report the sucrose content of the cane being delivered is rather low for this late in the season. A composite report for all mills would show that the average would be around 11 to 11½.

To date the six mills operating in the parish have ground a total of 56,188 tons. This includes cane delivered by Iberia Parish farmers and some cane from outside parishes imported here for grinding. It is estimated that about 25,000 tons of cane have been shipped outside the parish for grinding. This would give a total of about 75,000 tons delivered by Iberia Parish farmers to all mills to date.

The agent has visited practically every section of the parish in the past week and finds the cane growing very rapidly. This no doubt is due to good growing weather prevailing during the past two or three weeks.

In view of the excellent progress being made by cane indications are that the total tonnage will exceed the agent's previous estimate. At least a ton per acre. If favorable weather conditions continue and all cane is harvested, barring an early freeze, Iberia Parish farmers will produce a little more cane than in 1947, even though the 1948 acreage is estimated to be 3,000 under the 1947 acreage.

From a survey recently made by the agent it is estimated that this year's tonnage for sugar and syrup purposes will probably be 525,000 tons or better, provided of course favorable conditions prevail. If this is correct the 1948 crop should exceed the 1947 crop by about 40,000 tons or better.

All farmers have completed their fall planting of cane and it is now coming up to a good stand throughout the parish.

Over 5,000 acres of fall plant cane had winter cover crops planted on it.

---

## POLLEN BY PLANE CREATES NEW CANE

Plant scientists recently obtained valuable sugarcane hybrids in a dramatic project that involved cooperative work in two countries and an island possession and the transportation of pollen by plane.

This is the story as told by *Dr. E. W. Brandes,* in charge of sugar investigations for the U. S. Department of Agriculture.

About 10 years ago, plant explorers brought from Burma a wild sugarcane that sheds its lower leaves and leaf sheaths. The discovery was of special interest to Dr. Brandes and his associates because most sugarcanes have leaf sheaths that dry out and remain tightly

clasping the cane. If they could incorporate the self-cleaning characteristic in an improved variety, it would speed up harvesting, particularly by machine.

Plans to make the cross at the U. S. Breeding Station, Canal Point, Florida, could not be carried out because the Burma cane bloomed sparsely and too early for mating with other desirable parent varieties. The cross was finally accomplished in a three-way cooperative project. Working with the Department were Director Arturo Roque of the Puerto Rico Agricultural Experiment Station at Rio Piedras and Dr. Ramos Nunez of the Estacion Agricola Experimental at Palmira-Valle, Columbia.

In July 1947, Director Roque wired Dr. Brandes that the wild sugarcane planted at varying elevations at the Rio Piedras station was coming into flower. Dr. Brandes got in touch with Dr. Nunez and learned that three desirable cane varieties at Palmira-Valle were also in flower. Arrangements were then made for quick transport of the very perishable pollen from Puerto Rico to Columbia.

The crosses were made by Dr. George Sartoris of the Department. He took a plane to Puerto Rico, collected the pollen, and carried vials of it by plane to Colombia in specially designed refrigerated containers. The work was done in less than four days. Within six weeks, the Department had seeds from the hybrid cane. These are being used for further crossing to breed new, more easily harvested varieties.

## THE MARKETS

Only one spot sale of Louisiana raw sugar was recorded during the fifteen days since our last report. This consisted of approximately 2,000 tons from Milliken & Farwell to a local refiner at 5.63, delivered New Orleans. Coming on a day when the New York quotation of Willett & Gray had dropped to 5.57, New Orleans basis, the Louisiana sale was a very timely one and served to hold the local quotation at the 5.63 level on November 5th. The local quotation dropped down to the 5.57 price on Monday, November 8th, but was back to 5.63 on the following day when Puerto Rican raws sold in New York at 5.68. The 5.63 quotation is prevailing as we go to press today (November 12th).

Reports from New York today indicate that sellers are holding raws firmly at 5.75, but that buyers are showing little interest. The strike of longshoremen and other dock workers along the Eastern seaboard, with the resulting uncertainty, is credited with strengthening the market.

Three quotable sales of Louisiana Blackstrap Molasses were made at 15 cents a gallon in bulk f.o.b. plantation, on November 5th and 8th after a sale at 16 cents a gallon had been recorded on November 3rd. This market appears to be uncertain with buyers and sellers far apart in their ideas of values.

The Louisiana sugar industry has recently appointed a coordinator (see page 53) in an effort to stabilize the sale of blackstrap molasses and it will be interesting to see what can be accomplished by this all-out effort.

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The official quotations of both the Cane Products Trade Association and the Louisiana Sugar & Rice Exchange since the start of the pricing period have been as follows:

Week ending October 14th, 1948: Raws 5.55, Blackstrap, no quotation.

Week ending October 21st, 1948: Raws 5.58, Blackstrap 17.5 cents.

Week ending October 28th, 1948: Raws 5.63, Blackstrap 17.0 cents.

Week ending November 4th, 1948: Raws 5.63, Blackstrap 16.5 cents.

Week ending November 11, 1948: Raws 5.615, Blackstrap 15 cents.

## CROP NEWS BY PARISHES

(Continued from Page 54)

purity about 76 per cent. The sugar production in his district is averaging about 158 pounds to the ton of cane.

## ASK EXTENSION OF BLACKSTRAP PRICING PERIOD

The Grower-Processor Committee of the Louisiana sugar industry voted on November 12th, at a meeting held in Thibodaux, to recommend to the United States Secretary of Agriculture that the pricing period for Louisiana Blackstrap Molasses be extended beyond the present January 27th closing date for a period of at least 45 days but not more than 60 days.

This action was taken because it is believed that it will not be possible to move all of the 1948-49 Louisiana blackstrap molasses production during the period from October 8, 1948 through January 27th, 1949, the sixteen week period now stipulated in the 1948-49 Fair Price Determination. The Committee believes that a longer length of time will tend to allow a more orderly marketing of this season's blackstrap production.

The extension was asked for Blackstrap Molasses only.

—o—

## CUBAN BLACKSTRAP SOLD

Encouraging news, having direct bearing on the Louisiana Blackstrap market, was received by Louis LeBourgeois, newly appointed Louisiana Blackstrap Molasses Coordinator, when telephone conversations on November 10th with New York, and later with the Cuban Sugar Institute, in Cuba, revealed that the remaining balance of the 1948 Cuban Blackstrap Molasses production had been sold to a large distilling corporation in the United States.

In commenting on this development Mr. LeBourgeois stated he felt that the sale would be "extremely helpful to the Louisiana Blackstrap marketing situation, removing the carryover of Blackstrap from the 1947-48 Cuban crop.

The sale is reported to be based on the selling price of alcohol over a period of time. Based on the current price of alcohol, the price for the Cuban Blackstrap is about equivalent to 15 cents a gallon f.ob. Louisiana plantations, and is thus in line with today's Louisiana Blackstrap quotation.

The report indicates that all of the molasses must be manufactured into alcohol and cannot be re-sold by distillers to the feed trade or to any other users.

—o—

## U. S. AND CUBA REACH AGREEMENT ON REMAINING 1948 SUGAR SUPPLIES

The U. S. Department of Agriculture announced on October 22nd that continued adequate supplies of sugar for the United States and protection against sugar surpluses in Cuba at the year end are assured as a result of discussions just concluded in Washington between representatives of the Cuban Sugar Stabilization Institute and the Commodity Credit Corporation.

In keeping with the agreement entered into August 11, 1948 between the Institute and the Commodity Credit Corporation, a total of about 208,000 short tons (183,000 Spanish long tons) of sugar has been held under the control of the Institute to meet possible increases in the Cuban quota of sugar for the continental United States. The agreement provided that after October 15, 1948 the Institute, after consultation with CCC, could "dispose, at the Institute's free will, of such sugar or any portion thereof."

Approximately 38,000 short tons (33,000 Spanish long tons) will not be released to Cuban producers in order to meet the recent increase in Cuba's quota for shipment to the United States. Because of the excess weight of bags and adjustment for higher than 96° polarization of sugar shipped from Cuba this year, it is not necessary to release more than this amount even though the recent increase in Cuba's quota amounted to 74,175 short tons.

Pursuant to Cuban legal regulations, the balance of the 208,000 short tons of sugar, or 170,000 short tons, will remain under the control of the Institute. The Institute and Commodity Credit Corporation will continue to review the situation and to consult with respect to any measures or actions which may be necessary in the future.

## IN WASHINGTON

(Continued from Page 51)

Statement of F. E. Stanley of the Agricultural Economic Department of Louisiana State University on Probable Costs and Returns With Respect to 1948 Crop.

At the request of the American Sugar Cane League, the Agricultural Economics Department of the Louisiana Agricultural Experiment Station has prepared estimates of the probable costs and returns to raw sugar mills, large cane farms and family-type cane farms in Louisiana for 1948, assuming the following conditions:

1. Raw sugar prices at $5.60 per hundred pounds.
2. The yield of cane per acre as reported in the last available estimate of the Crop Reporting Board (18 tons per acre).
3. Blackstrap molasses prices of 18c, 16c, 14c, and 12c.

This report summarizes the impact of the above assumed conditions on the Louisiana sugar industry.

### Raw Sugar Mills

In 1947, net income to raw sugar mills in Louisiana was $8,583 per mill (Table 1). For 1948, with $5.60 sugar and 18c molasses, the net income per mill would amount to —$36,482; with $5.60 sugar and 16c molasses, —$40,504; with $5.60 sugar and 14c molasses, —$44,334; and with $5.60 sugar and 12c molasses, —$48,163 (Table 2).

In 1947, net income to Louisiana raw sugar mills per ton of cane ground was 13c (Table 1). In 1948 with $5.60 sugar and 18c molasses, the net income would be —57c per ton of cane ground; with $5.60 sugar and 16c molasses, —64c; with $5.60 sugar and 14c molasses, —69c; and with $5.60 sugar and 12c molasses, —75c (Table 3).

In 1947, net income to Louisiana raw sugar mills was 9c per 100 pounds of sugar manufactured. In 1948, with $5.60 sugar and 18c molasses net income per 100 pounds would be —37c; with $5.60 sugar and 16c molasses, —41c; with $5.60 sugar and 14c molasses, —45c; with $5.60 sugar and 12c molasses, —48c (Table 4).

### Large Farms

In 1947, net income to large cane farms in Louisiana was —$11,989 per farm (Table 5). In 1948, with $5.60 sugar and 18c molasses, projected net income per farm is —$14,508; with $5.60 sugar and 16c molasses, —$15,336; with $5.60 sugar and 14c molasses, —$16,296; and with $5.60 sugar and 12c molasses, —$17,124 (Table 6).

The net income per ton of cane sold on large cane farms in 1947 was —$1.07. In 1948, projected net income per ton sold, assuming $5.60 sugar and 18c molasses, is —$1.17; with $5.60 sugar and 16c molasses, —$1.23; with $5.60 sugar and 14c molasses, —$1.31; with $5.60 and 12c molasses, —$1.37.

The net income per acre of cane grown on large farms in 1947 was —$14.95 (Table 5). In 1948, with $5.60 sugar and 18c molasses, net income per acre is —$18.06; with $5.60 molasses and 16c molasses, —$19.09; with $5.60 sugar and 14c molasses, —$20.25 with $5.60 sugar and 12c molasses, —21.31.

### Small Farms

In 1947, labor income* per farm on small cane farms in Louisiana was $722 (Table 9). In 1948, with $5.60 sugar and 18c molasses, projected labor income figures for small cane farms are $185 per farm; with $5.60 sugar and 16c molasses, $162; with $5.60 sugar and 14c molasses, $134; with $5.60 sugar and 12c molasses, $110 (Table 10).

In 1947, labor income per ton of cane sold on small farms in Louisiana was $1.66. In 1948, with $5.60 sugar and 18c molasses, projected labor income is 54c; with $5.60 sugar and 16c molasses, 49c; with $5.60 sugar and 14c molasses, 42c; with $5.60 sugar and 12c molasses, 37c (Table 11).

In 1947, labor income per acre of cane grown on small cane farms in Louisiana was $28. In 1948, with $5.60 sugar and 18c molasses, projected labor income per acre of cane grown is $7.00; with $5.60 sugar and 16c molasses, $6.08; with $5.60 sugar and 14c molasses, $5.03; with $5.60 sugar and 12 molasses, $4.10.

Table appears in original article.

* Labor income per farm is the return to the farm operator for his labor and management for the year. This measure is calculated by deducting the earnings of capital (interest on the total assets used in the business) from farm income.

## COORDINATOR

(Continued from Page 53)

tributors and other buyers and with marketing agents of other producing areas.

(c) Disseminate marketing information to Louisiana producers. However, in disseminating such information the coordinator shall not use the name of any producer unless specifically authorized by such producer to do so.

4. There is no legal compulsion as to the marketing practices of any producer. Each producer shall continue to individually dispose of his molasses to a purchaser, at a price and through channels of his own selection. The program is not designed to disturb or replace any marketing or brokerage arrangements presently existing or hereafter made. It is expected that through voluntary cooperation and coordination, there will be orderly and efficient marketing to the benefit of all interested parties.

The program will be financed jointly with funds appropriated by Congress in the "Agricultural Marketing Act of 1946" and by the producers, up to the sum of $8,000.00, or $4,000.00 of federal funds and $4,000.00 of producer funds. Any expense in excess of $8,000.00 shall be defrayed by the participating producers of blackstrap molasses on a gallonage pro rata basis.

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## PROFITS

(Continued from Page 52)

higher total productive man work units per man than the older aged groups in most cases.

### Education of the Farm Operator

The best measure of education obtained from the producers surveyed in the Louisiana family-type sugar cane farm study was the number of years of formal school completed. It is recognized that the years of formal schooling is not the most accurate measure of knowledge or wisdom but it was the the only quantitative measure which was available. The 503 farmers interviewed in 1946 reported completing an average of about 3 years of school. Nearly one-half, or 46 per cent, had completed less than two years. Only 6 per cent reported that they had completed nine or more years of school.

The educational level of these farm operators was indicated to be related directly to the major factors affecting farm returns. Those producers with less than 2 years of formal school had an average of 21 acres in cane per farm, an average yield of 16.7 tons per acre, produced 10 acres of sugar cane per man, and only 33 per cent had tractors. The growers who had completed 9 years or more of school had an average of 53 acres in sugar cane, made average yields of 19 tons per acre, produced more than 13 acres of cane per man on the farm, and about two-thirds of them had tractors. The group with the least education had average capital investments of $5840 per farm as compared with $20,100 for the group with the most education. Labor earnings per farm varied from $901 per farm for the low-education group to $1,231 for the high-education group.

The educational level was so closely related to variations in the major factors that no satisfactory analysis of education in relation to farm returns independent of the major factors could be made. In general, the facts indicate that the chances of a producer having a favorable position in regard to each of the major factors which were directly important in affecting farm profits was much greater with a relatively high level of education.

### Race

In the Louisiana sugar cane area, about two-thirds of the family-type farms are operated by white farmers and the remaining one-third by Negro operators. Throughout the period studied, from 1938 to 1947, white farmers had considerably larger farms, higher yields, and had more highly specialized farms. Consequently, when considering these major factors alone, white farmers had greater earnings on the average than Negro farmers. Also, a close relationship between race and tenure has been observed. In 1946, for instance, 46 per cent of the white farm-

ers were full owners, whereas, only 20 per cent of the Negro farmers were full owners.

When the influence of the major factors was reduced in the 1946 analysis by sub-sorting relatively uniform major groups, however, there was no definite pattern in the relationship between race and farm earnings. In most cases, the Negro farmers on similar sized farms with similar yields to white farmers made total earnings equally as high as the white farmers. Only on the large, high-yield major farm group was there any outstanding difference in earnings and this difference is mostly likely caused by variation in size.

These facts lead to the conclusion that, other things being equal, farm earnings are not closely related to racial differences.

## Tenure

The most common forms of tenure on family-type sugar cane farms in Louisiana are (1) full ownership, (2) part ownership, (3) cash renting, and 14) share renting. During the period studied, the farms surveyed in this area were made up of about 35 per cent full owners, 15 per cent part owners and renters, 20 per cent cash renters, and 20 per cent share renters.

In the detailed 1946 study, the share renters had the largest farms, were more specialized, and obtained the greatest output per worker. The part owners and renters had higher yields and were more highly specialized than the other tenure groups. The cash renters had the smallest farms, lowest yields, and were more greatly diversified than the other groups. For purposes of analysis, these different tenure groups were organized into two major types, owners and renters, including the part owners with the owner group.

Within each major grouping as to size and yield, the 1946 data indicated that the renters average higher total labor earnings for the year than the owner groups. On the small farms with low yields, the owner producers had average labor earnings for the year of $392 as compared with $568 for the renters in this classification. On the large farms with high yields, the owners made average labor earnings of $1579 for the year as compared with $1914 for the renters.

These facts indicate that from the financial point of view, owner-operation of sugar cane farms of the family-type is not always the most profitable type of tenure. Additional results over a long period of years are needed to bring out any long-time basic conclusion on this factor but the facts from this 1946 study do indicate that the costs of maintaining capital on owner-operated farms, including a charge of 5 per cent on the capital invested as interest costs, were greater than the costs of renting the land.

## Size of the Farm Family

By "size of the farm family" is meant the number of persons living on the farm who are dependent upon the farm for subsistence. Size of the farm family affects farm earnings by increasing or decreasing the cash labor costs with the extent of the saving in cash labor costs depending upon the age and the sex of the children.

The average farm family on the family-type sugar cane farms in the Louisiana region was composed of the farmer, his wife, and three children. The size of the farm business as measured in acres in sugar cane and acres in all crops tended to vary directly with the size of the farm family; the smallest families had the smallest farms, and the largest families had the largest farms. Sugar cane yields, the degree of specialization, and the relative efficiency in the use of labor were not related closely to the size of the farm family. Variations in those factors accompanying changes in the size of the farm family followed no particular pattern.

In the determination of total expenses for the year, charges were made for the unpaid labor based on the cost to do the work accomplished by the members of the family if the work had been hired labor. With these costs included, the 1946 data indicate that there is no direct relationship between the size of the farm family and the labor earnings of the farm operator. The farmers hav-

ing relatively large families averaged about $200 a year less in cash labor costs but their total labor costs, including the charge for unpaid labor, were about the same on similar sized farms with similar yields per acre. Because of the peak labor demands in sugar cane production during the early cultivating season and the harvesting season when schools are in operation, most of the unpaid family labor was used in general chore work around the farm and large families did not mean an abundant supply of farm labor when this labor was most needed.

## Degree of Mechanization

The most simple and widely used measure of relative mechanization on family-type sugar cane farms is the use of tractors as compared to workstock. Mechanization on these farms influences farm earnings by decreasing the amount of hired labor required and speeding up farm operations as well as by making possible the cultivation of a larger area by a smaller labor force. If the costs of the machines and the operating costs are more than offset by the savings obtained, increased farm returns are obtained.

Throughout the studies of family-type sugar cane farms in Louisiana, a very close relationship has been observed between the size of the farm business and the degree of farm mechanization. In 1946, of the 503 farms studied 304 had no tractors, 178 had one, and 21 had 2 or more. The group operating with workstock only had an average of 13 acres of sugar cane per farm as compared with 28 acres per farm for those with one tractor and 99 acres for those with 2 tractors or more.

When the influence of the major factors was reduced, the degree of farm mechanization as measured by the use of tractors varied inversely with profits on the relatively small farms and directly with profits on large farms, although the data on this point were not sufficiently clear to draw long-time conclusions until more intensive studies are made. For the small farms with rela-

(Continued on Next Page)

**STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946**

Of The Sugar Bulletin, published semi-monthly at New Orleans, La., for October 1, 1948, State of Louisiana, Parish of Orleans.

Before me, a Notary Public in and for the State and parish aforesaid, personally appeared Marcel J. Voorhies, who, having been duly sworn according to law, deposes and says that he is the Editor of the Sugar Bulletin and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit.

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The American Sugar Cane League of the U. S. A., Inc., New Orleans, La.; Editor, Marcel J. Voorhies, New Orleans, La.; Managing Editor, none; Business Manager, none.

2. That the owner is the American Sugar Cane League of the U. S. A., Inc., New Orleans, La.; Murphy J. Foster, Franklin, La., President; J. J. Munson, Houma, La., Vice President; R. H. Chadwick, Bayou Goula, La, La., Treasurer; J. J. Shaffer, Jr., Ellendale, La., Secretary.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are none.

MARCEL J. VOORHIES,
Editor.

Sworn to and subscribed before me this 28th day of September, 1948.

BRITTMAR P. LANDRY,
Notary Public.

(Seal)

(My commission expires at death.)

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tively low yields, the farms operating with workstock power only made average labor earnings of $586 per farm as compared with a loss of $145 for the small farms with tractors. These farms had from 7 to 10 acres in sugar cane and 20 to 40 acres in all crops. For the large farms with high yields, average labor incomes varied from $1692 per farm for those operating with workstock power only to $1770 for those using tractor power. These farms averaged from 27 to 54 acres in sugar cane and from 57 to 95 acres in all crops.

These facts point up an important problem in regard to mechanization on family-type sugar cane farms in Louisiana. The fixed costs involved in operating a tractor are high and only by using a tractor for a large number of days per year can the cost be reduced to such an extent that a tractor can be employed to advantage. Many small sugar cane farms do not provide sufficient tractor work to permit the extensive usage needed for the efficient operation of tractors. On such farms, tractors are an expensive luxury as the total tractor costs exceed the costs of workstock and additional hired labor needed to accomplish the work. These results indicate that sugar cane producers on relatively small farms should think twice before purchasing a tractor and should plan to hire tractor work, purchase tractors cooperatively with other small producers, or stick to the mules, where the purchase of a tractor is indicated to be an uneconomic one.

[1]Costs and Returns on Family-Type Sugar Cane Farms in Louisiana, 1938 to 1945, Louisiana Agricultural Experiment Station Bulletin No. 420, by J. Norman Efferson, June, 1947.

## Florida 1948 Crop Sugarcane Price Announced

The Production and Marketing Administration of the U. S. Department of Agriculture has announced that the prices for 1948 crop Florida sugarcane that must be paid to growers by processors who also apply for Sugar Act payments will be based on the same

formula as that used for the 1947 crop.

The basic price for standard sugarcane—with sugar prices at present levels—will be $1.03 per ton of standard cane for each 1 cent per pound of the price of raw sugar.

The price determination announced today has been changed in two respects from the 1947 determination: (1) because of freight rate increases the freight differential of 17 cents which processors may deduct in calculating the basic price for sugarcane has been increased to 23 cents, and (2) the definition of standard sugar cane has been revised to provide for the determination of the quality of the juice in sugarcane on the basis of "normal" juice.

As required by the Sugar Act of 1948, the price determination was made following investigations and public hearings. The Act requires that a determination be issued each year establishing fair and reasonable prices for sugarcane that must be paid to growers by processors who apply for Sugar Act payments.


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MARCEL J. VOORHIES, Editor

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**Cover Pictures by Metcalf Studio, 504 Willow Street, Franklin, La. For copies and enlargements write the studio.**

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# IN WASHINGTON WITH C. J. BOURG

*Brief of The American Sugar Cane League in connection with Public Hearings called by the Secretary of Agriculture for November* 15, 1948 *under the provisions of the Sugar Act of* 1948.

The American Sugar Cane League, which has as members more than 10,000 growers and 57 processors in Louisiana, recommends that the consumption estimate for 1949 shall be 7,107,000 tons, raw value, or in round figures, 7,100,000 tons, raw value.

The law under which we are operating is the Sugar Act of 1948 and Section 201 of said Act provides, in part, as follows:

" * * * and, in order that such determinations shall be made so as to protect the welfare of consumers and of those engaged in the domestic sugar industry by providing such supply of sugar as will be consumed at prices which will not be excessive to consumers and which will fairly and equitably maintain and protect the welfare of the domestic sugar industry, the Secretary, in making any such determination, in addition to the consumption, inventory, population, and demand factors above specified and the level and trend of consumer purchasing power, shall take into consideration the relationship between the prices at wholesale for refined sugar that would result from such determination and the general cost of living in the United States as compared with the relationship between prices at wholesale for refined sugar and the general cost of living in the United States obtained during 1947 prior to the termination of price control of sugar as indicated by the Consumers' Price Index as published by the Bureau of Labor Statistics of the Department of Labor."

The report on the sugar bill to the House by its Agriculture Committee, and to the Senate by its Finance Committee, contains the following discussion of Section 201:

" * * * The over-all or controlling guide is the provision which requires the establishment of a supply of sugar which will be consumed at prices which will not be excessive to consumers and which will fairly and equitably maintain and protect the welfare of the domestic sugar industry."

Chairman Clifford Hope of the Agriculture Committee, when explaining the bill to the House, stated:

"In general, of course, that is analogous to the *parity* provision accepted as a standard in determining fair agricultural prices. It relates the cost of sugar to the cost of other commodities. That is one of the conditions which the Secretary *must* take into consideration along with the others which I have mentioned."

Chairman Senator Eugene Milliken of the Finance Committee, when presenting the bill to the Senate, stated:

" * * * The *over-all controlling* guide is the provision which requires the establishment of a supply of sugar which will be consumed at prices which will not be excessive to consumers, and which will fairly and equitably maintain and protect the

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# THE EFFECTS OF 2-4-D ON THE SUGARCANE PLANT

*Dr. E. W. Brandes, Head Pathologist in Charge, of the Agricultural Research Administrattion, of the Bureau of Plant Industry, Soils, and Agricultural Engineering, USDA., has suggested that the following letter from Dr. George Arceneaux to Mr. F. Evans Farwell, relative to the use of* 2-4-D. *in the sugarcane fields, be printed in* The Sugar Bulletin, *and we take pleasure in doing so in this issue.*

Houma, Louisiana
October 26, 1948

Mr. F. Evans Farwell
Milliken & Farwell
Whitney Building
New Orleans, Louisiana

Dear Mr. Farwell:

At our recent conference in Baton Rouge I promised to summarize for you our information on the effects of 2, 4-D on the sugarcane plant. One of the first tests we made with 2, 4-D was an attempt to determine the tolerance of growing cane to 2, 4-D. The following excerpt from one of our publications summarizes our observations on this point:

> "No measurable effects were observed from sprayings repeated 3 times with concentrations as high as 1½ pounds of 2, 4-D (acid equivalent) per 100 gallons of water. At the rate of 100 gallons of the solution per acre this represents, in the aggregate, 4½ pounds of the active ingredient per acre.
>
> "On the other hand some damage was indicated from 3 sprayings at a concentration of 3 pounds of 2, 4-D per 100 gallons of water. This treatment gave an average reduction of 9 percent in yield of cane per acre, with a corresponding decrease in rate of stalk elongation during the growing season."

Hence while it would be incorrect to say that the sugarcane plant is completely immune to the effects of 2, 4-D, the chemical has no important effect on sugarcane at concentrations required to control susceptible weeds.

As to the cumulative effect of repeated applications on the soil, in one experiment on an area heavily infested with alligator weed we made 3 applications of 1 pound (acid equivalent) of the sodium salt per acre annually on the identical plots over a period of 3 years. At the end of the experiment we could detect no harmful effects from the repeated applications. In fact the 2, 4-D plots in the last crop (second stubble) gave substantially better yields of cane than obtained from hand weeded plots, as a result, no doubt, of the more effective control of the dominant weed.

As regards the use of 2, 4-D as a soil surface treatment to control weed germination, our information shows very definitely that it is important to keep the chemical at a safe distance from germinating cuttings of sugarcane. 2, 4-D can have a very unfavorable effect on sugarcane germination, but our results show that a surface application 4 inches or more above the seed piece will not materially affect the rate of sugarcane germination or growth.

Trusting that the above summary gives the information you wanted, I am

Sincerely yours,

GEORGE ARCENEAUX,
*Senior Agronomist*

# REPORT TO CONTACT COMMITTEE OF THE AMERICAN SUGAR CANE LEAGUE ON SOILS AND FERTILIZERS. MEETING OF FEBRUARY 20, 1948

*By Lester G. Davidson, Associate Chemist, and George Arceneaux, Senior Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.*

Some of the important physical properties of sugarcane soils are their texture, structure, moisture-holding capacity, and their retention of plant nutrients. These physical properties influence the growth of sugarcane because of their effect on water supply, availability of air to the roots, nutrient supply, and disease.

Texture may be defined as the percentages of sand, silt, and clay, of which the soil is composed. The finely textured soils of the sugarcane areas have a large capacity for the storage of available nutrients. The heavy clay soils may lack adequate aeration. The texture of a soil is a fixed property of the soil, and may be materially changed only at prohibitive cost. Poor soil texture may be partly compensated for by maintaining a desirable soil structure.

Soil structure refers to the arrangement of the soil grains in the soil. These grains are usually held together in aggregates, the size, shape, and stability of which have an important influence on soil productivity. Desirable soil structure may be destroyed by disturbing the soil when it is too wet. This is one reason why drainage is so important in the sugarcane area. Because of the improved drainage in many areas, the soil dries more rapidly, permitting more time between rains for cultivation of the crop without damage to the soil structure. The crop may be cultivated in less time with the present mechanized equipment, so that the grower may choose optimum moisture conditions. Thus, improved drainage plus mechanization should result in maintaining or improving the soil structure during the cultivation period. The reverse may be true during the harvesting period. During this period the heavy mechanized equipment must operate in the fields without regard to optimum moisture conditions. This may result in serious damage to the soil structure, resulting in a soil that is difficult to drain, and less permeable to the cane roots. Under unfavorable conditions it is difficult to re-establish a desirable soil structure in a reasonable period of time. Since mechanized farming is increasing, we may expect that more or less of the cane soils, depending on the rainfall, will be adversely affected by the operation of the heavy harvesting machinery.

This adverse effect on soil structure may be partly compensated for by the addition of organic matter to the soil. This is commonly done by turning under the soybean crop grown in rotation with the cane. Since the use of mules has greatly decreased in the past few years, less of the soybeans are cut for hay and less corn is grown for feed, presumably resulting in an increased acreage of soybeans turned under as green manure. The addition of green manure, or other organic matter, to the soil tends to make soils granular, preventing stickiness when wet. In heavy soils, the addition of organic matter results in more open structure favoring increased circulation of air and water.

One factor affecting cane yields is the use of adequate amounts of fertilizer. Fertilizer practices on 10 plantations at representative locations in the sugarcane area show that, on the average, fertilizer consumption is somewhat higher per acre than it was 10 years ago. Further, the rates of application of fertilizer have been maintained or increased during this entire 10-year period. During the past few years ammonium nitrate has replaced some

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# CROP NEWS BY PARISHES

## from

## COUNTY AGENTS

The questionnaire that we sent to our friends, the county agents, for this issue of *The Sugar Bulletin,* asked them, among other things, how much time had been lost in their districts because of what we called "the recent rains". Most of the replies that we have received are dated November 24th but the "recent" rains have been rather permanent since that date and several days have been added to the time lost in all of the parishes listed.

We continue to receive reports from our readers telling us how much they enjoy this news on the progress of the crop, and we take this opportunity of publicly passing these compliments on to the gentlemen in the sugar parishes who are making it possible for us to conduct this feature of *The Sugar Bulletin.*

**St. John Parish.** V. O. Calandro reported on November 24th that 8 days had been lost in St. John Parish up to that time because of the bad weather. Mr. Calandro advised us that the trash and mud situation in his district is worse this season than it was last season, but he considers the sugar yield in his district thus far to be satisfactory.

About 75% of the cane crop in St. John parish will be harvested mechanically this season and approximately 40% of the crop had been harvested up to November 24th.

**Iberia Parish.** The report from W. E. Williams also dated November 24th, states that 5 days had been lost in his district because of the inclement weather to that date. He considers the trash and mud situation to be better than that of last season with sugar yields fairly satisfactory considering the rather adverse conditions that the crop has experienced throughout the year.

Thirty to forty per cent of the cane crop in Iberia Parish will be harvested mechanically this season and on November 24th, 40 to 45 per cent of the crop had been harvested.

Mr. Williams states that recent high winds have blown a lot of cane down and that this will make harvesting with mechanical equipment difficult, and will probably also have some adverse effect on the sucrose content of the downed canes.

**Terrebonne Parish.** In a report dated November 24th, Richard Sonnier reports from Terrebonne Parish that 4 days had been lost in harvesting operations to that date because of the rains. The trash and mud situation in his district is as bad as it was last season. Mr. Sonnier considers the cane yields thus far to be satisfactory.

About 70% of the cane crop in Terrebonne Parish will be harvested mechanically this season and approximately 40% of it had been harvested up to November 24th.

Manpower, Mr. Sonnier, reports, is short both in the fields and in the mills. The fields, he says are very wet and harvesting has slacked off about 50 per cent.

**Lafourche Parish.** On November 24th, A. C. Moreau reported from Lafourche Parish that 3 days had been lost because of the weather. The mud and trash situation is just as bad as it was last season and Mr. Moreau considers the sugar yield in his district to be disappointing up to the date of his report.

About 75 per cent of the cane crop in Lafourche Parish will be harvested mechanically this season and harvesting operations were approximately 40 per cent completed on November 24th.

**St. Charles Parish.** A. J. Melancon, Jr., reported on November 24th that 4 days had been lost to that date because of the rainy spell of weather. He

(Continued on Next Page)

considers the trash and mud situation in his district to be better than it was last season and the sugar yields to date to be satisfactory.

Approximately 80 per cent of the cane crop in St. Charles Parish will be harvested mechanically this season. On November 24th only about 18 per cent of the crop had been milled.

**St. Landry Parish.** St. Landry Parish has also been having its troubles with the wet weather and A. K. Smith, Jr. reported on November 24th, that 6 days had been lost at that time. The sugar yield, he says, has thus far been disappointing.

Twenty per cent of the cane crop in St. Landry Parish had been harvested on November 24th. Mr. Smith says that no mechanical harvesters will be employed in his district this season.

**West Baton Rouge Parish.** O. E. Camus reported on November 24th that four days had been lost in West Baton Rouge Parish up to that time because of the wet weather. He reports the mud and trash situation to be worse than it was last season but states that the sugar yield thus far has been satisfactory.

About 55 per cent of the cane crop in West Baton Rouge Parish will be harvested mechanically this season and 60 per cent of it had been harvested on November 24th, at which time approximately 195,000 tons of cane had been ground. Sucrose was low following the rains, but the tonnage of the plant cane was running better than had been expected.

**St. Mary Parish.** Our report from P. J. deGravelles is dated November 29th and at that time 8 days had been lost in St. Mary Parish because of the rains. Mr. deGravelles considers the mud and trash this season to be as bad as it was last year and says that the yield of sugar thus far has been disappointing.

About 75 per cent of the cane crop in St. Mary Parish will be harvested mechanically this season and the harvest was 45 per cent completed on November 29th.

# THE MARKETS

(November 26th, 1948)

The raw sugar market has continued steady during the two weeks since our last report and it is interesting to note that sugars for February and March shipment have been contracted for by refiners north of Cape Hatteras at 5.55 which is an advance of about fifteen points in these future delivery sugars during the past month.

The spot raw sugar price in New York has remained steady at 5.68 throughout the entire period. Today as we go to press two New Orleans refiners are reported to have each purchased about a thousand tons of Cuban raws for early December delivery via the Seatrain Lines, at 5.60 delivered New Orleans.

The ticker reports today that between 12 and 15 cargoes of raw sugar are tied up at New York, Baltimore, Philadelphia, and Boston docks because of the longshoremen's strike but it is possible that the strike will be settled before this report appears in print.

No spot sales of Louisiana raws have been recorded since October 25th.

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The trend of the Louisiana blackstrap molasses market has continued on the weak side and today the sale of a sizable quantity is reported at 11½ cents a gallon, in bulk f.o.b. plantation, which is about 3 cents a gallon less than the price at which this product was quoted in our last issue. The decline to the present low was marked by a quotable sale on November 15th at 14 cents a gallon, a quotable sale on November 18th at 13 cents a gallon; sales at 12 cents a gallon on November 23rd and November 24th, and today's sale at 11½ cents.

Negotiations are now in progress through Mr. Louis LeBourgeois, Louisiana Blackstrap Molasses Marketing Program Coordinator, for the movement of possibly 5,000,000 gallons of Louisiana blackstrap into New Orleans for distilling into alcohol and it is hoped that the load that this will remove from the molasses market will have a stabilizing effect on the sale of

the remaining Louisiana blackstrap molasses production.

The officials quotations of both the Cane Products Trade Association and the Louisiana Sugar & Rice Exchange since the start of the pricing period have been as follows:

Week ending October 14th, 1948: Raws 5.55, Blackstrap, no quotation.

Week ending October 21st, 1948: Raws 5.58, Blackstrap 17.5 cents.

Week ending October 28th, 1948: Raws 5.63, Blackstrap 17.0 cents.

Week ending November 4th, 1948: Raws 5.63, Blackstrap 16.5 cents.

Week ending November 11, 1948: Raws 5.615, Blackstrap 15 cents.

Week ending November 18th, Raws 5.63, Blackstrap 14 cents.

Week ending November 25th, Raws 5.63, Blackstrap 12½ cents.

## REPORT

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of the nitrogen fertilizer previously used. Field fertilizer tests have shown that when equal quantities of nitrogen are applied, ammonium nitrate compares favorably with the nitrogen sources previously used. It is therefore believed that reduction in cane yields in Louisiana is not due to quality or quantity of plant food used on the sugarcane.

Another factor affecting cane yields is the use of organic matter. This factor is being studied in an experiment being conducted at the Houma Station. This experiment, established during 1931, is designed to measure the cumulative effect of green manuring and preservation of cane trash as a means of improving soil productivity. The practice of turning under the soybean crop in rotation with sugarcane, and the alternate treatments of (1) removal of the soybean crop as for hay and (2) removal of the soybean crop and the addition of 40 pounds of nitrogen in the form of ammonium sulfate are being tested under each of the following conditions with reference to the cane trash (a) trash removed (b) trash burned and (c) trash plowed under. Each of the 9 treatments is being repeated in duplicate from cycle to cycle on buffered plots of 1/30 acre. The soil is classified as Yazoo very fine sandy loam.

The 4-year cycle consists of a crop of soybeans and 3 crops of sugarcane, hence the green manuring and alternate treatments are applied once every four years prior to and during the plant cane year. Trash treatments on the other hand follow each of the 3 cane crops and therefore are applied in 3 out of every 4 years. In addition all plots in each stubble crop are fertilized with a 12-4-4 mixture at the rate of 333 pounds per acre.

The following table gives average yields per crop obtained during the last two cycles of sugarcane crops (6 crops). These are believed to afford a better measure of the cumulative effects of the various treatments than would the average of all 12 crops obtained so far.

Plots where the soybeans had been removed, 40 pounds of nitrogen added on plant cane and all the cane trash plowed under gave the highest yields

**TABLE 1—Results of long term organic matter and fertilizer experiment conducted during the period 1931-1946. Yields shown are average values for the last 6 cane crops. Varieties used were Co. 281, Co. 290, and C. P. 34/120.**

| Treatments | | | Yields | | |
|---|---|---|---|---|---|
| Soybeans | Fertilizer on plant cane. Pounds nitrogen per acre | Cane trash | Cane per acre | Sugar per ton of cane | Sugar per acre |
| | | | (tons) | (pounds) | (pounds) |
| (1) Removed | 40 | Removed | 27.13 | 177.1 | 4805 |
| (2) Removed | 40 | Burned | 28.39 | 173.9 | 4937 |
| (3) Removed | 40 | Plowed under | 30.00 | 179.7 | 5391 |
| (4) Plowed under | none | Removed | 28.57 | 188.4 | 5383 |
| (5) Plowed under | none | Burned | 28.01 | 178.9 | 5011 |
| (6) Plowed under | none | Plowed under | 27.68 | 173.3 | 4797 |
| (7) Removed | none | Removed | 24.20 | 190.2 | 4603 |
| (8) Removed | none | Burned | 26.30 | 176.7 | 4647 |
| (9) Removed | none | Plowed under | 26.99 | 179.8 | 4853 |

of cane (30 tons) and sugar (5391 pounds) per acre. At the other extreme are results from plots where soybeans were removed, trash removed and no fertilizer added on plant cane. Annual average difference in yields per acre between these two treatments were nearly 6 tons of cane and 788 pounds of sugar. In comparing these two treatments it will be noted that the more advantageous one provided for systematic restoration of organic matter and an application of commercial fertilizer on each of the 3 cane crops. The organic matter came essentially all from sugarcane.

A comparison of these results with those obtained with some of the other treatments emphasize the importance of supplying both of these fertilizer elements. With treatment No. 1 where all three crops were fertilized and both soybean growth and cane trash removed the annual yield deficiency per acre was nearly three tons of cane and 586 pounds of sugar as compared with treatment No. 3. Only slightly better results were obtained with treatment No. 2 where the soybean growth was removed and fertilizer added on plant cane and the cane trash burned instead of being removed. With treatment 9 on the other hand, where the soybeans were removed, the cane trash plowed under and no fertilizer added on plant cane the average deficiency per crop was approximately 3 tons of cane and 534 pounds of sugar per acre as compared with treatment No. 3. This difference may be credited directly to the use of nitrogen fertilizer applied to plant cane.

Of considerable practical importance is the question whether the nitrogen in the soybean crop can replace the application of nitrogen fertilizer on plant cane. In addition, of course, the legume crop will supply important quantities of organic matter. Yields of cane per acre from treatments 4, 5, and 6, where soybeans were plowed under *in lieu of* nitrogen fertilizer on plant cane were significantly below the average obtained from the best treatment (#3), but the indicated yield of sugar per acre obtained from treatment #4 (soybeans plowed under, no fertilizer on plant cane and trash removed) was approximately the same as obtained from treatment #3. Judging from all information available it must be concluded that the fertility value of a soybean crop in terms of nitrogen is substantially less than 40 pounds per acre where a satisfactory supply of organic matter has otherwise been provided for, in spite of the fact that the nitrogen content of a soybean crop as ordinarily plowed under in Louisiana will commonly range from 175-240 pounds per acre. This indicates that much of the nitrogen in a soybean crop plowed under at the usual date becomes available and leaches out before it can be utilized by the cane crop.

A comparison of results obtained with treatments 1, 2, and 3 adds further emphasis to the importance of organic matter as an element of soil fertility. In all three cases the soybean crop was removed and 40 pounds of nitrogen applied on plant cane. In treatment 2, burning destroyed about 60% of the cane trash. The remainder was either buried in the soil or too wet to burn as is ordinarily found to be the case under plantation conditions. For these 3 treatments therefore the percentage of residue incorporated in the soil may be stated as—(1) 0; (2) 40%; (3) 100%. All other treatments were uniform and no other source of organic matter was provided for. Increases in average yields of cane and sugar obtained with treatments #2 and #3 over treatment #1 were closely related to the amount of organic matter plowed under as cane trash.

To summarize—

(1) Highest yields of cane and sugar were obtained where organic matter in substantial quantities was plowed under and commercial fertilizer added to each crop of sugarcane—

(2) Under conditions of the experiment cane trash could be substituted for green manuring as a source of organic matter but omission of organic matter from both sources caused a marked reduction in yields of cane and sugar per acre—

(3) As a source of nitrogen alone the soybean crop is equivalent to substantially less than 40 pounds nitrogen in the form of ammonium sulfate—

(4) Omission of organic matter from both sources without nitrogen fertilizer on plant cane caused reductions of approximately 20% in yields of cane per acre and nearly 15% in yield of sugar per acre as compared with the best treatment tested.

## IN WASHINGTON

(Continued from Page 68)

welfare of the domestic sugar industry."

The above quotations from the Sugar Act of 1948 and the discussions thereunder by the Committees and by the Chairman of the House Committee on Agriculture and the Senate Committee on Finance constitute in our mind the "intent of Congress" in regard to the provisions of Section 201.

We recommend—(Recommendations appeared in the November 15th issue of *The Sugar Bulletin* on page 51).

It will be noted that in our recommendation we do not suggest the use of the cost-of-living factor, as we sincerely believe that the figure of 7,100,000 tons established as the consumption estimate and the total quotas for 1949 will gradually have the effect of restoring the price of sugar to the level contemplated by Congress in providing the cost-of-living formula in order to provide "such supply of sugar as will be consumed at prices which will not be excessive to consumers and which will fairly and equitably protect the welfare of the domestic sugar industry". It will be possible for the Secretary to watch the situation carefully in the first months of 1949 in order to determine the effect of his determination and to adjust his estimate of consumption according to the needs and to insure the welfare of the domestic sugar industry.

As Congressman Clifford Hope stated, the cost-of-living formula is "analogous to the parity provision accepted as a standard in determining fair agricultural prices". These parity provisions in the law are being maintained for other crops, and there is some talk of strengthening them where necessary. Therefore, in order to give equity to sugarcane and sugar beet growers and to maintain some similarity of treatment for them with their neighbors who produce other crops, in accordance with the demonstrated "intent of Congress", it will be necessary for the Secretary to take into account the parity concept for sugar from time to time throughout the year.

Costs have gone up for everybody. They have gone up for sugar producers, too. They have likewise gone up for the bakers, the confectioners, the bottlers, and other large consumers of sugar. But the item of cost which has gone up to the greatest extent is definitely and positively *labor*. Everybody's labor cost has increased. In the case of the bottlers, they may be afflicted with a large-sized bottle, which is the result of their own choice. In the case of the confectioners, they have to face the extreme rise in the prices of chocolate and peanuts. In all of these cases, the increases have been greater—very much greater—than the relatively slight increase in the price of sugar since pre-war. But most significant of all, is the fact that the price of sugar has actually *come down* below 8.40¢ per lb. on refined sugar, which was established by OPA and the Secretary of Agriculture. The price today is 7.75¢ per lb., which is .65¢ below the OPA and Secretary of Agriculture ceiling. In the meantime, the price of raw sugar has decreased from the OPA and the Secretary of Agriculture's ceiling of 6.32¢ per lb. to a price today of 5.68¢ per lb., which is .64¢ below that ceiling price. The reduction has been much greater and has been recovered only recently.

At the hearing last year with regard to the estimate of consumption for 1948, there is no statement in the record which indicates a complaint about the fairness of this 8.40¢ or

this 6.32¢ price of OPA and the Secretary of Agriculture.

In order to fully appreciate the plight and position of the sugarcane and sugar beets growers, it must be remembered that their minimum wages are fixed by the Secretary of Agriculture; and that they pay the higher prices for what they buy, which the Department of Agriculture recently announced as being 195 percent of comparable prices paid in 1935-39. In the meantime, the price of sugar is only 161 percent of what it was in 1935-39.

Accordingly, we advocate a restoration to the OPA and the Secretary of Agriculture ceiling and level of price as the lowest that sugar prices should become, and as long as the cost of living remains above the level of 1947 under OPA price control. This 10-month period of 1947 was selected by Congress as a fair and reasonable index for the consumer as well as for the producer.

The argument is made that there is plenty of sugar in the world, and, therefore, the U. S. consumer should be allowed to get his sugar at the cheapest price. Of course, such a contention is either made in bad faith or in ignorance. Everybody knows that the people of the United States have the money and the most favorable exchange position. We could get all the sugar in the world if we wanted it, because we have the dollars with which to purchase it. But Congress, in its wisdom, and after extended hearings and due consideration, decided to re-establish the quota system as the fairest program for the United States—for the consumers as well as for the producers. The Congress decided that there should be quotas and that in the administration of such quotas, the Secretary of Agriculture is instructed to provide "a supply of sugar that will be consumed at prices which will not be *excessive to consumers* and which will fairly and equitably *maintain and protect the welfare of the domestic sugar industry*". Such an argument about buying in the cheapest market has no place before this hearing. Any one wishing to so contend should go to Congress and ask for an amendment to the Sugar Act. We might properly inquire: Why not encourage Cuba to export to us candy and carbonated beverages? They can be more cheaply manufactured in Cuba than in the U. S. We are opposed to this. But it would be as consistent as the big industrial users objecting to our members obtaining a fair price for their sugarcane.

Last year we were treated to a most remarkable demonstration by the industrial users, when they seriously advocated, as a group, that the consumption estimate should be 8,500,000 tons. They should have known that such an estimate of consumption would have reduced most of the domestic sugar industry to failure and bankruptcy. Surely, none wanted that! Yet when they advocated 8,500,000 tons, that was tantamount to stating that they were not willing to allow the domestic producers and processors, as such, to exist. We remind the Secretary of Agriculture and the large industrial users that destroying the domestic sugar industry would have the effect of leaving all consumers at the mercy of foreign producers. In the past, that experience has demonstrated that in the long run it would mean higher prices and foreign control. It should not be forgotten how the domestic sugar industry saved the situation in 1942 and provided sugar for all states in the Union at a reasonable ration and at a reasonable price.

The Secretary of Agriculture was impressed by this advocacy of 8,500,000 tons. One refiner had also recommended a consumption estimate of 8,000,000 tons. The Secretary established his estimate at 7,800,000 tons in January 1948. He undoubtedly considered that to be a middle-ground figure. It was not long before it became apparent that it was too high. Yet it was 700,000 tons less than the industrial users had advocated! Within two months, it became necessary for the Secretary of Agriculture to reduce his estimate to 7,500,000 tons. But the downward trend of the market price which had started—continued. The

price of refined sugar was reduced from 8.40¢ per lb. under OPA and the Secretary of Agriculture's ceiling to 7.50¢ per lb. More important, the price of raw sugar was reduced from 6.32¢ per lb. under OPA and the Secretary of Agriculture's ceiling to 5¢ per lb. No other agricultural crop suffered a reduction in its price immediately following the removal of government controls! When the distress became general and it became obvious that the consumption estimate would have to be drastically cut (as even the Cubans could not get along on such a price in view of the rising costs) the Secretary of Agriculture accordingly reduced the consumption estimate to 7,000,000 tons. We hope that a situation similar to the experience of 1948 can be avoided in the future.

We bespeak on behalf of the domestic producers consideration for them and for the hundreds of thousands who are dependent upon them. We should never forget that the Sugar Act is an instrument to keep each area in proper balance in the United States market under the direction of Congress by establishing prices which will *protect and maintain the domestic sugar industry* at prices which are *not excessive to consumers*. That is the law which the Secretary is seeking to administer.

The industrial users appear as a group and they, jointly, are a very impressive consumer group. Consumers of other farm products—in the raw or as processed—do not enjoy as favorable or a similar position. With their influence, they carry the responsibility of respecting the rights of others.

We insist upon a price which protects and maintains the domestic sugar industry. Sugar growers have just received instructions as to the minimum wage they must pay to their labor. There are no such determinations being made regarding the minimum wage rates to be paid by farmers who produce any other commodity whatsoever.

Therefore, the Secretary of Agriculture should not give any but *proportionate* consideration to this "consumer group" of the industrial users. Certainly, he should consider what they have to offer as consumers in proportion to household users and as compared to what the producers and processors may have to offer or to claim as beneficiaries of the Sugar Act.

We did not rely entirely upon our own figures or our own conclusions with reference to the assurance of losses unless the prices are permitted to increase. Instead, we asked the Agricultural Economics Department of the Louisiana State University to make a survey for us. Dr. J. Norman Efferson and Professor F. E. Stanley are recognized economists. Their previous surveys on costs and returns in the Louisiana sugar industry have been submitted to OPA and U. S. Department of Agriculture. Upon careful examination, they have been found to be trustworthy and accurate. Only recently Dr. Efferson was selected by the Department of Agriculture to make a world-wide survey of the rice industry which took him to the Pacific, Asia and Africa. His report is now before the Department of Agriculture and other Government officials.

The report written by Professor F. E. Stanley with the assistance and under the supervision of Dr. J. Norman Efferson submits that a 5.60¢ per lb. price for sugar, and a price of 12¢ to 18¢ for molasses on the Louisiana 1948 crop would mean losses to producers and to processors.

The tables upon which these figures are based are attached hereto as an exhibit in this hearing.

(The Stanley report appeared in the November 15th issue of *The Sugar Bulletin* on page 58)

* * *

Thus, it will be seen that the Louisiana industry would not be maintained under present prices in accordance with Section 201 of the Sugar Act of 1948.

*It is apparent that a definite statement of price objective by the Secretary of Agriculture would be of great assistance to the industry. If the Secretary should choose to interpret the "intent of Congress" with regard to Section* 201 *and particularly the cost-of-living index, it would give a better understanding and serve to stabilize the*

*sugar market within fair and reasonable bounds. We should like to have the Secretary include in his determination of the consumption estimate a statement with regard to the price of sugar as it may be related to the price of sugarcane.*

With due consideration for the provisions of Section 201 regarding which we are satisfied that it was the intent of Congress to have the Secretary provide "a supply of sugar that will be consumed at prices which will not be *excessive to consumers* and which will fairly and equitably *maintain and protect the welfare of the domestic sugar industry*", we sincerely recommend that the consumption estimate for 1949 should be 7,100,000 tons, raw value, in round numbers. We are convinced that this will bring about a situation wherein the welfare of the sugar industry will be protected and consumers will have a price which is not excessive by any standard and particularly in comparison with the prices of other farm commodities and foods.

We sincerely believe that an estimate of 7,100,000 tons will gradually, and in an orderly manner, restore the price of sugar to a proper level. We fear that a very much lower figure might drastically and suddenly cause an extraordinary or violent increase in price, which would be disturbing in the sugar market.

We realize that in 1947 there was no quota and the application of quotas in 1948 caused many persons to buy up large stocks of sugar in anticipation of January 1, 1948. This actually amounted to a considerable stock of sugar—some 200,000 tons or so—to be carried over and consumed in 1948, in addition to the deliveries of the 7,117,000 tons.

Consequently, our belief is that the 7,100,000 tons, which we advocate, is actually a reduction in the quota, although the figure of 7,100,000 tons is only 100,000 tons less than the present 1948 quota. But, in fact, it is 300,000 or 400,000 tons less than the actual sugar consumed in 1948.

We sincerely believe that the result will gradually establish a price that is not excessive to consumers but will maintain and protect the domestic sugar industry in accordance with the Sugar Act of 1948.

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## C&H Buys Western Sugar Refinery

Earl B. Wilson, president of California and Hawaiian Sugar Refining Corporation, Ltd., announces the purchase of Western Sugar Refinery in San Francisco for the sum of $3,500,000. and $280,000. for inventory stocks.

Western Refinery was owned by the J. D. & A. B. Spreckels Co. Mr. Wilson announced that the sale is a result of an offer from the former owners in a reorganization move. This reorganization will result in Spreckels' interests withdrawing from the cane sugar refining business. Western Sugar Refinery was established by Claus Spreckels in 1863.

Recently C. Brewer & Co. announced the purchase of the Spreckels' interest in five Hawaiian sugar plantation companies for approximately $3,000,000. As a result of this sale the Spreckels organization disposed of its Hawaiian sugar interests.

Western Refinery, located in San Francisco, has an annual melt capacity of about 250,000 tons. This is about one-third the size of the main C & H refinery at Crockett.

In August the J. D. and A. B. Spreckels Co. announced in San Francisco plans to discontinue the Western Sugar Refinery not later than December 31 of this year.

The annual production of the Crockett refinery is approximately 600,000 tons. The Aiea plant has a normal yearly output of about 40,000 tons.

Western refinery has previously handled the raw sugar output of six Hawaiian plantations. Recently it was announced that the output of raw sugar from these six plantations would be marketed through C & H.

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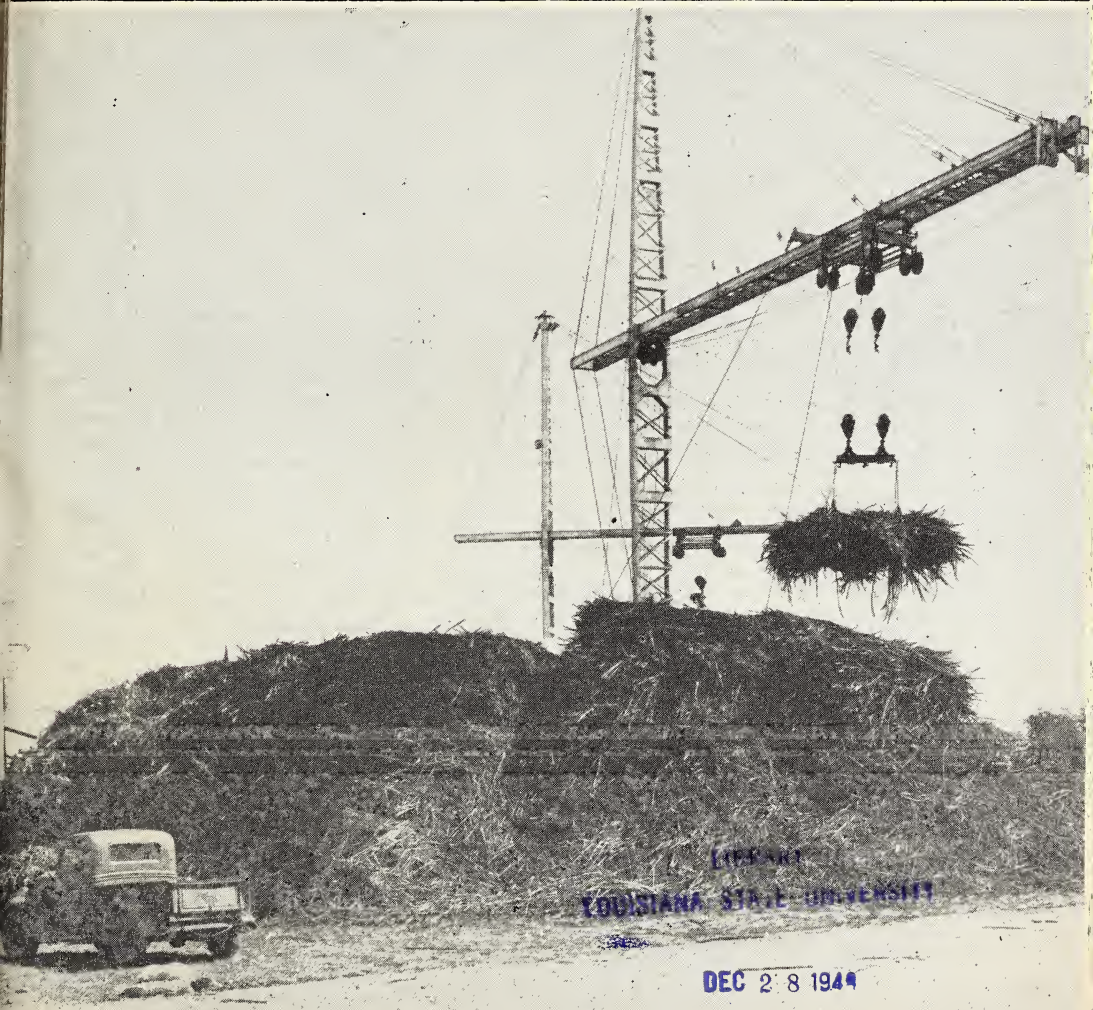

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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

**The Official Organ of the American Sugar Cane League of the U. S. A.**

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# IN WASHINGTON WITH C. J. BOURG

Public hearings have been held by the U. S. Tariff Commission and the Committee for Reciprocity Information in connection with the negotiation of trade agreements with the Dominican Republic and Peru with respect to sugar and related articles as covered by Paragraph 5 of the Tariff Act of 1930.

The statement, as presented at both hearings for the entire domestic sugar industry, is as follows:

This statement is submitted in the matter of the investigation announced by the Commission on November 5, 1948, with respect to articles named in connection with proposed negotiations for trade agreements with certain foreign countries. The undersigned are interested in the investigation with respect to sugar and related articles as covered by paragraph 5 of the Tariff Act of 1930.

This statement is submitted on behalf of the members of the

American Sugar Cane League
Association of Sugar Producers of Puerto Rico
Farmers & Manufacturers Beet Sugar Association
Florida Sugar Producers
Hawaiian Sugar Planters' Association
United States Beet Sugar Association

There have been five successive reductions in the rates of duty on sugar as enacted in the Tariff Act of 1930. The rates now in effect on Cuban sugar are only 25 per cent of the 1930 rates. In the case of dutiable sugar imported from countries other than Cuba, the present rates of duty are only 27½ percent of the 1930 rates. These low rates of duty are completely inadequate for the protection of the domestic sugar industry. The adoption of these low rates would have brought disaster to the domestic sugar industry had there not been in effect a quota system regulating the importation of sugar into the United States.

Sugar quota regulation, first enacted in 1934, is now embraced in the Sugar Act of 1948. This law, enacted August 8, 1947, took effect on January 1, 1948, simultaneously with the expiration of the Sugar Act of 1937. The new Act is for a term of five years ending December 31, 1952. In reporting the bill to the House and Senate, the House Committee on Agriculture and the Senate Committee on Finance stated: "It should be pointed out that this bill is a short term measure designed to meet the postwar adjustment problems in the production and distribution of sugar." In making this statement, the Committee gave recognition to the fact that production and consumption of sugar and world trade in the commodity have undergone drastic changes since the outbreak of World War II and that an extended period will be required for working out the adjustments appropriate for the years ahead. Any trade agreement negotiations likewise should recognize that the sugar industry of the world is just entering into a tremendous postwar adjustment which makes it imperative, for example, that no conces-

(Continued on Page 92)

# LATE SEASON CONTROL OF TIE-VINES IN SUGARCANE BY MEANS OF 2,4-D SPRAYED BY AIRPLANE

*By Leo P. Hebert, Assistant Agronomist, and George Arceneaux, Senior Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.**

Tie-vines (various species of morning-glory) have been, for sometime, important weeds in sugarcane fields of Louisiana. Control measures at best have been difficult because weeds of this group germinate extensively and make most of their growth after the cane has passed the stage permitting satisfactory use of tractor-drawn implements. During the past, when labor was plentiful, it was more or less standard practice to chop down tie-vines with hoes after "lay by". Following the introduction of mechanized cultivation, weeding was largely discontinued with the result that infestations of tie-vines and other late season weeds have been on the increase from year to year. During 1948, growth of tie-vines in fields of sugarcane reached critical proportions in many places and especially in the vicinity of Houma.

The following species were the ones most extensively found and obviously causing the greatest damage in 1948: Red morning-glory (*Ipomoea coccinea*); cypress vine (*I. quamoclit*); and button tie-vine (*Jacquemontia tamnifolia*). Of these red morning glory, causing major damage in the southeastern parishes, is probably the most serious pest of the three. Growing with extreme vigor in competition with sugarcane, a plant of this species sends out numerous branches which eventually form a thick canopy over-topping and shading the cane plants beneath it. In advanced stages, stems of the weed attain a diameter of 3/4 to 1 inch near the ground surface.

Cypress vine in sugarcane develops a growth somewhat similar to that of red morning-glory but is a less aggressive competitor. This is probably the most widely distributed of the 3 species and is considered an important weed throughout the Sugar Belt.

Button tie-vine has much coarser stems than either of the 2 other species but branches less profusely. Individual plants, as a rule, do not spread out as much as do plants of the other two species, but under conditions of heavy infestation this weed will overtop and extensively shade out sugarcane.

Besides obviously stunting the affected sugarcane plants extensive growths of tie-vines greatly complicate the harvest operations under any condition, but especially in cases where harvesting machines are used. Under conditions of heavy infestation, harvesting by machinery is practically impossible. In addition, results of tests have shown that shading of sugarcane plants by tie-vines greatly interferes with the accumulation of sugar. In results of one test previously reported [1]stools of sugarcane over-topped by a heavy canopy of tie-vines (*Ipomoea coccinea*) contained 52 pounds less available sugar per ton of cane than did comparable samples of cane from the same field where the weed infestation did not occur.

This report summarizes results of experiments on the use of selective weed killers applied by airplane to control tie-vines in sugarcane after "lay by". Results of all follow-up work on commercial scale which have come to our attention are also discussed.

## Experimental Results

On the evening of July 29, the 6 teatment described later were applied on separate cuts of a field of C. P. 36/13 on Southdown Plantation and treatments A1, A2, A3 and E2 were repeated on separate cuts of a field of

(Continued on Page 89)

# CROP NEWS BY PARISHES

## from

## COUNTY AGENTS

The weather has not been good during the fifteen days since the last issue of *The Sugar Bulletin* and we expected to get some bad news from the county agents for this issue.

The New Orleans Weather Bureau reported on December 10th that the rainfall during November was 9.94 inches as compared with a normal of 3.34 inches and it is remarkable that the cane farmers have been able to carry on as well as they have under the very trying conditions that have prevailed throughout November and for most of the time during the present month. The reports from the county agents follow.

**Terrebonne Parish.** Richard L. Sonnier reported on December 11th that 4 days had been lost in his district since the start of the grinding campaign because of bad weather. He estimated that on December 11th 60 per cent of the crop had been harvested and that the grinding campaign should be completed sometime between January 10th and January 15th.

The present indications are that the cane production in Terrebonne Parish this season will be about 20 per cent larger than that of last season.

The trash situation is about the same as it was two weeks ago.

**Iberia Parish.** W. E. Williams estimates that the cane production on his district will be between 5 and 10 per cent larger this season than it was last year. Mr. Williams has sent in a special report, dated December 11th, and we quote it below.

"Approximately 333,000 tons of Iberia Parish sugar cane had been harvested as of December 10, 1948.

The six sugar mills operating in the parish ground a total of 287,783 tons to that date. It is estimated that about 65,000 tons of Iberia Parish cane went to outside mills for processing while approximately 20,000 came from surrounding parishes for processing by Iberia Parish sugar mills.

The average sucrose to date for all mills in the parish is 11.54, the purity 72.8, and the pounds of sugar recovered 143.5. This, of course, is an average of all mills in the parish.

Reports from sugar mill operators as well as farmers indicate that about 60% to 65% of the 1948 cane crop has been harvested. Indications are that the grinding will not be finished until somewhere between January 5th and 10th depending to a great extent upon weather conditions prevailing. So far this year very little time has been lost due to bad weather. However, mills report an average of 4 to 5 days lost to bad weather and slowing down the mill on account of slow delivery. Some mills report loss of time as high as 20% to 23% due to various causes. The greatest loss of time was in the early part of the season when cane was green and deliveries slow."

Mr. Williams reports the trash condition in his district to be better than it was two weeks ago.

**St. James Parish.** Reporting on December 11th from St. James Parish, Joseph Lamandola states that about 4 days have been lost since the start of the grinding campaign in his district because of bad weather. He estimates that 65% of the crop was harvested to the date of his report.

The present indications are that the cane production in St. James Parish will be about 15% greater this year than it was last year.

The trash situation is better than it was two weeks ago. Mr. Lamandola estimates that the crop in his district should be completed about January 10th.

**Rapides Parish.** About 25% more cane will be harvested in Rapides Par-

(Continued on next page)

ish this year than was harvested last season, according to a report from William L. Roark, dated December 11th. To that date 75% of the crop had been harvested and Mr. Roark expects the crop to be completed about January 5th.

The trash situation is reported as being about the same as it was two weeks ago.

**Pointe Coupee Parish.** Seventy-eight per cent of the cane crop in Pointe Coupee Parish had been harvested by December 11th, A. B. Curet reported on that date, with a cane production in prospect about 7% larger than that of last season. The situation with regard to trash is about the same as it was two weeks ago.

Mr. Curet expects the crop in his district to be completed about December 24th, weather permitting.

**St. Landry Parish.** Eight days have been lost to bad weather in St. Landry Parish since the start of the harvest, and A. K. Smith, Jr., estimates that about 65% of the cane in his district had been harvested to December 11th.

Mr. Smith expects the cane production in St. Landry parish to be about 15% larger this season than was the case last year.

The trash situation in his district is better than it was two weeks ago.

**West Baton Rouge Parish.** The news from West Baton Rouge Parish continues to be good. O. E. Camus reported on December 13th that it now appears that 43% more cane will be harvested in his district this year than was harvested last year. He estimates that the four mills in the parish will grind about 337,000 tons of cane this season, including out of the parish cane, as compared with a total grinding of 235,000 tons last season.

Five days have been lost because of bad weather since the start of the grinding campaign and on December 13th about 79½% of the crop had been harvested. The crop will be completed between the 25th and the 31st of December.

## Fertilizer Supply For 1948-49

Despite a generally brighter outlook for fertilizer this year, prospects for nitrogen are only slightly better than last year and supplies can be expected to continue tight, warns the U. S. Department of Agriculture in a fertilizer supply report recently released. This estimate for the 1948-49 fiscal year indicates that instead of an earlier estimated increase of 10 percent, supplies of nitrogen for the current fiscal year will level off at about a 7 percent increase. This change in the anticipated supply picture has come about as the result of unforeseen operating difficulties and production problems which have tended to curtail output at a few plants.

Phosphate supplies for fertilizer purposes are expected to reach 2,100,000 tons $P_2O_5$ as compared with about 2,000,000 tons available for the 1947-48 fiscal year. Potash is estimated at 1,020,000 tons $K_2O$ as compared with about 920,000 for the 1947-48 fiscal year. This means about 5 percent more phosphate and 10 per cent more potash. About 955,000 tons of nitrogen will be available for commercial fertilizer for the 1948-49 year as compared with about 888,000 tons last year.

In connection with these latest estimates, U. S. Department of Agriculture officials say that farmers should realize that supplies of nitrogen fertilizers are not being increased uniformly over the country and some regional variation can be expected. The curtailed production early in the year appears to have affected particularly the supplies of nitrogen solutions available for mixed fertilizers in the East and South. Farmers in these areas are cautioned by the Department not to put off until the last minute the making of arrangements for essential supplies. This report on the fertilizer situation indicates that nitrogen will continue to be the most troublesome problem, both as to quantity for mixing purposes and for straight application.

### A Report From Mr. Bourg

I have contacted Mr. James Gorman of the American Cyanamid Company

in New York, and he tells me that he feels certain he can deliver fertilizer to Louisiana in January and February to cover all of the commitments which his Company has made.

He states that these commitments have been reduced to 65% of the amounts ordered and that his Company has made the proposal to Louisiana growers that they accept ammonium nitrate in lieu of cyanamid. He tells me that he has received about 40% favorable replies and hopes that more will come so that he will be able to deliver all commitments by March 1st.

I told Mr. Gorman that many of the growers in Louisiana feel that the late growth of cane in November was due largely to the late application of fertilizer last spring. He recognizes this and has promised me to cooperate in getting the fertilizer down to you earlier.

He suggests that if all or a substantial majority of the growers to whom he has written his proposal will answer him promptly, he can thereupon make plans and schedules that will permit his delivering all fertilizer commitments before March 1st.

I urge that immediate replies be sent to the American Cyanamid Company by all growers who have ordered fertilizer from that Company. In their replies, growers should also express the anxiety and willingness to accept delivery as soon as possible. Those who have already accepted this proposal but did not stress their willingness to accept early delivery should do so in a second letter at once!

## THE MARKETS

(December 13th, 1948)

The raw sugar market turned decidedly stronger during the first few days in December when the New York spot raw sugar quotation of Willett & Gray, Inc., adjusted to a New Orleans basis, advanced from 5.63 on December 1st, to 5.68 on December 2nd and 3rd. The spot price has since steadied at 5.65 and this price is being quoted as we go to press today.

The surprising development of the period was the sales of Louisiana raws to a local refiner on December 1st and December 2nd at 5.58, delivered New Orleans. These haulted the advance in prices in Louisiana for two days but, thanks to the new rules being used by the local quoting agencies this year, the Louisiana quotation returned to the adjusted New York price on December 3rd. This price was 5.68, 10 points higher than the price paid for the Louisiana raws.

As stated above, the New York quotation today, adjusted to a New Orleans basis, is 5.65. All season's average price, weekly average price, and price date of arrival contracts are enjoying the benefit of this higher quotation under the new quoting rules. *If the old regulations using only Louisiana sales were still in force the price today would be* 5.58 *and the shippers of raw sugar and the cane growers would be getting* 7 *cents a hundred pounds, in the case of raws, and about* 7 *cents a ton, in the case of cane, less than the current quotation.*

---

Despite a tremendous struggle to strengthen its position the Louisiana blackstrap market has continued to slide off. The drop however has not been as precipitous as it was earlier, and in fact there is some indication that the bottom of the slide may have been reached. Prices have, nevertheless, declined from the 11½ cents a gallon quotation two weeks ago to 9 cents at this writing.

A ray of hope that the market might be ready to move upward was lighted by a quotable sale on December 10th at 9½ cents a gallon, however, this was quickly snuffed out by a later sale at 9 cents and the condition of the market today appears to be uncertain.

The price changing sales during the period occurred on November 30th, when the market dropped to 11 cents; on December 6th when it slipped to 9 cents; on December 13th when the sale at 9½ cents was reported, and again on December 13th, when the price went back to 9 cents.

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The officials quotations of both the

(Continued on next page)

Cane Products Trade Association and the Louisiana Sugar & Rice Exchange since the start of the pricing period have been as follows:

Week ending October 14th, 1948: Raws 5.55, Blackstrap, no quotation.

Week ending October 21st, 1948: Raws 5.58, Blackstrap 17.5 cents.

Week ending October 28th, 1948: Raws 5.63, Blackstrap 17.0 cents.

Week ending November 4th, 1948: Raws 5.63, Blackstrap 16.5 cents.

Week ending November 11th, 1948: Raws 5.615, Blackstrap 15 cents.

Week ending November 18th, Raws 5.63, Blackstrap 14 cents.

Week ending November 25th, Raws 5.63, Blackstrap 12½ cents.

Week ending December 2nd, 1948: Raws 5.61, Blackstrap 11.3 cents.

Week ending December 9th, 1948: Raws 5.66, Blackstrap 9.4 cents.

—o—

# Recommendations of the Sugar Advisory Committee

## Production

With a sugar marketing system already highly developed the committee felt strongly that major emphasis in sugar research was needed on production.

A. *Breeding and agronomic testing* sugar cane and sugar beets for mechanized production. In the opinion of the committee new plant breeding and variety development work is urgently needed to keep pace with advancements in improved production equipment. It urged that if possible work be started in fiscal 1949 and that it be pushed vigorously in fiscal 1950.

B. *Elimination of trash for foreign matter* in sugar cane and sugar beets. Committee members most familiar with this problem believed that the research relating to the elimination of trash and foreign matter has not kept pace with related breeding work.

C. *Weed Control* as now being studied should be expanded to provide more work on sugar beets and to include work on sugar cane.

D. *Insecticides and equipment* for their application require further work and expansion to include sugar cane.

E. *Nutritional requirements* for sugar beet and sugar cane plants should be studied through work directed toward the effect of soil structures, nutritional requirements and plant food elements upon the synthesis and storage of sucrose.

## Utilization

A. *Development of new and industrially useful products* from sucrose and sucrose-containing materials with emphasis on blackstrap molasses should be pushed in fiscal 1950 with a start made in fiscal 1949. (Work along this line was activated for fiscal 1949.)

B. *Utilization of sugar beet tops* through dehydration for livestock feed, underway in fiscal 1949 should be expanded in 1950 to include work on beet crowns as a medium for producing penicillin and developing equipment and techniques for recovering and handling tops or crowns. Work of a similar nature relating to sugar cane should be started.

C. *Sugar technology investigations* should receive additional emphasis in fiscal 1950 as the importance of technological advances to stability and progress in the sugar industry cannot be over-emphasized.

## Marketing

A. *Maintaining quality* of harvested sugar beets and sugar cane now being investigated under an RMA project should be continued on an expanded basis. The members indicated that if this project could not be shifted to Marketing they would assign to it a place of importance in the Production field second only to breeding and agronomic testing.

B. *Market standards* for syrups, edible molasses and liquid sugar should receive further attention in fiscal 1950.

C. *Analysis of national and international trade* in sugar should be studied through a project relating to the collection and analysis of production and marketing information on laws, regulations and other pertinent data for different countries. Commencement of work on this project during 1949 was recommended.

D. *Survey and analysis of sugar marketing structure* and possibilities for improvement. The committee recommended that this work be continued in fiscal 1950 to such extent as may be deemed practicable after reviewing the progress made during 1949. It was the understanding of the committee that the project is presently concerned chiefly with a descriptive analysis of the marketing structure of the various segments in the sugar industry in the United States.

E. *Pattern of use of sugar and other competitive sweeteners* by household consumers, showing seasonal and other factors involving such use, should be studied in fiscal 1950. The committee considers this a companion project to the study of industrial consumption of sweeteners which is scheduled for completion in 1949.

(Recommendations for marketing work were not arranged by the committee in accordance with their order of importance.)

—C—

## CONTROL

(Continued from Page 84)

C. P. 36/13 on Argyle Plantation (South Coast Corporation). In each case the predominant weed species was cypress vine.

On the morning of July 30, the 6 treatments were repeated on separate cuts of a field of C.P. 34/120 heavily infested with red morning-glory. The cane had been planted in August 1947 and had developed rank growth at the time of application. The weed also was in relatively advanced stages of development, and in some spots of ex-treatments described later were applied cane tops.

### Treatments and Method of Application

Two forms of 2,4-D were tested: (1) the triethanolamine salt and (2) the isopropyl ester. The amine salt is soluble in water and the ester is soluble in oil. They are ordinarily marketed in the form of concentrated solutions.

Treatments tested included formulaitons of the above two compounds at different rates per acre diluted with the appropriate liquid (water or distillate) for satisfactory application. The following table gives the designation of each treatment and its description:

| Treatment designation | Form of 2, 4-D | Rate per acre expressed as free acid equivalent (pounds) | Total volume of diluted solution applied per acre (quarts) |
|---|---|---|---|
| A[1] | Triethanolamine | 1/2 | 3 |
| A[2] | " | 1 | 3 |
| A[3] | " | 1-1/2 | 3 |
| E. | Isopropyl ester | 1/4 | 1 |
| E[2] | " | 1/4 | 2 |
| E[3] | " | 1/2 | 2 |

Spray solutions were applied by means of a pump operated by an air driven "propeller" activated and controlled by the speed of the plane. This assured a relatively uniform rate of application at all speeds. By use of appropriate nozzles which had been previously calibrated it was possible to regulate the rate of application per acre within a negligible limit of error.

Table 1 gives results of field obser-

**TABLE 1. Effects of 2 forms of 2, 4-D at different rates on 2 species of morning glory. Applications made on July 29-30. Examinations made on August 16.**

| Treatment[1] | Red flowzred morning glory (Ipomoea coccinea) | | | | | Cypress vine (Ipomoea quamoclit) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of plants examined | Percentage distribution of examined plants as to degree of injury | | | | No. of plants examined | Percentage distribution of examined plants as to degree of injury | | | |
| | | Dead | Severely injured | Slightly injured | Not injured | | Dead | Severely injured | Slightly injured | Not injured |
| A[1] | 710 | 98.30 | 0.57 | 0 | 1.13 | 57 | 96.49 | 3.51 | 0 | 0 |
| A[2] | 517 | 100.00 | 0 | 0 | 0 | 45 | 100.00 | 0 | 0 | 0 |
| A[3] | 260 | 99.23 | 0.77 | 0 | | 26 | 96.15 | 3.85 | 0 | 0 |
| E[1] | 530 | 75.28 | 8.30 | 12.26 | 4.15 | 88 | 98.86 | 0 | 1.14 | 0 |
| E[2] | 576 | 97.05 | 0.52 | 2.43 | | 327 | 71.25 | 0.62 | 15.29 | 12.84 |
| E[3] | 1161 | 99.74 | | | 0.26 | 0[2] | – | – | – | – |

[1] See text for description of the various treatments.
[2] None of this species found in plots of this treatment.

vations on the 2 species of tie-vines made on August 16.

The isopropyl ester gave results which, on the whole, were satisfactory but this form of 2,4-D did not show any advantage over the amine salt.

An application of the amine salt at the rate of 1/2 pound per acre gave results considered satisfactory from a practical standpoint but permitted few "escapes". There was essentially no difference between results obtained with rates of 1 and 1-1/2 pounds, respectively. In both cases all observed plants had been either killed or severely injured. These included a number of plants only a few inches tall growing alongside the sugarcane. It is interesting to note that enough of the herbicidal solution could penetrate the over-topping sugarcane foliage to kill plants so situated.

In the case of both species of Ipomoea studied, the first response to 2,4-D was a pronounced wilting of tender terminal sections of the stem. This was followed by a disintegration of external stem tissue in the zone immediately above the ground surface. The bark there became soft and watery and could be readily rubbed off with the finger. Later the interior tissues of the roots assumed a brownish color and finally the entire plant died. Thus the evidence indicates that eventual destruction of the plant was caused by failure of the root system brought about through the action of translocated 2,4-D.

Observations were also made on several other species of weeds incidentally occurring in the sprayed area. The following is a summary of results observed:

(a) Weeds generally killed or severely injured
   1. *Acalypha ostryaefolia* (Three seeded mercury)
   2. *Ambrosia trifida* (Blood weed, giant rag weed)

(b) Weeds suffering moderate injury
   1. *Euphorbia heterophylla* (Milk weed, wild poinsettia)
   2. *Caperonia castaneaefolia* (Bird's eye, Mexican weed)

(c) Weeds suffering little or no apparent injury
   1. All grasses
   2. *Melothria pendula* (Creeping cucumber)
   3. *Physalis barbadensis* (Barbados ground cherry)

## Commercial Scale Trials

In addition to experiments discussed above, trials of 2,4-D sprays to control tie-vines in sugarcane were made on a commercial scale at a number of places during 1948. Results obtained are briefly summarized below.

### Ashland (South Coast Corporation)

On August 5, 6, 7, an application was made by airplane on 500 acres of sugarcane heavily infested with cypress vine. The treatment was the same as A2 previously described (Triethanolamine equivalent to 1 pound free acid in 3 quarts of water per acre). Field observations made 3 weeks after the application showed practically all plants of the weed either dead or severely injured. It is interesting to note in this connection that very satisfactory results were obtained in the case of a field sprayed just 45 minutes before a heavy shower.

### Southdown Plantation

On August 27, spray treatment as described for Ashland was applied on 100 acres of cane showing severe infestations of red morning-glory and cypress vine in relatively advanced stages of growth. The same treatment was applied on an additional 100 acres in more or less the same condition on August 29. Results as determined by field inspections 3 weeks after application showed almost all plants of the 2 species either severely injured or dead. Approximately 1/2% of the plants of red morning-glory survived and later developed a few blossoms. These were usually found in places where extensive matting of the growth had occurred and it is considered probable that leaves of these "escapes" were not fully exposed to the herbicidal spray.

### Georgia Plantation (South Coast Corporation)

On September 1, an application of 2,4-D as described for Ashland was made on 200 acres of sugarcane heavily infested with cypress vine and showing an occasionally heavy growth of button tie-vine. A uniformly satisfactory kill of cypress vine was obtained, but a few of the button tie-vine plants (1-2%) escaped with apparently minor injury.

### Bon Secours Plantation (F. A. Graugnard & Sons)

On August 30, a spray application as described for Ashland was made on 200 acres of sugarcane showing a heavy infestation of button tie-vine and occasional plants of cypress vine. Observations made on September 20 revealed all cypress vine plants either killed or severely injured and most of the button tie-vine plants either killed or severely injured. Approximately 2-3% of the latter had escaped with apparently minor injury.

### Columbia Plantation (John M. Caffery)

On September 1, airplane application of 2,4-D in water solution was made on 325 acres of sugarcane showing an unusually heavy infestation of button tie-vine and here and there a very heavy infestation of cypress vine. The treatment consisted of an alkanolamine salt of 2,4-D in water solution at a rate intended to give 1 pound of the salt (expressed as free acid) in 3 gallons of water per acre.

Results obtained on this plantation varied considerably between the different fields. Over approximately 80% of the treated area all cypress vine and substantially all of the button tie-vine were either killed or severely injured. On part of the remaining area almost all of the cypres vine had been killed but most of the button tie-vine had escaped with minor injury; on the other part neither of the two weeds seemed to have been severely injured. It is concluded that the herbicidal solution was probably not applied uniformly over the entire area treated. Some areas may have received a heavier dosage than necessary while others quite obviously did not get a heavy enough application. The equipment used in making the spray application at this location was not seen by the authors.

### Discussion of Results

Results obtained in experimental trials and applications on limited commercial scale have shown conclusively that the three species of climbing weeds under investigation can be satisfactorily controlled with 2,4-D. In the case of cypress vine (*Ipomoea quamoclit*) and red morning glory (*I. coccinea*) the recommended application is triethanolamine salt at a rate equivalent to 1 pound free acid per acre dissolved in enough water to permit satisfactory coverage. (Other alkanolamine salts of 2,4-D may be equally satisfactory). With equipment now available application of quantities of spray material as low as 3 quarts per acre can be satisfactorily made.

Button tie-vine (*Jacquemontia tamnifolia*) did not occur on plots of the original experiment but results obtained from commercial applications indicate that this weed will require dosages somewhat heavier than needed to control cypress vine and red morning-glory.

Timing of the herbicidal application is considered extremely important. Spraying should be delayed until the great bulk of the tie-vine crop has had a chance to germinate and make some growth, but should not be delayed to the point of permitting the weed to damage the cane crop. Considerable damage by way of stunted cane growth has already been done when the vine has developed extensively over cane tops. In such cases the matted vines even after being killed will prevent normal development of the cane stalks beneath. In extreme cases, tops entangled in the network of dead vines will snap off under tension caused by elongation of the stalk in the process of growth.

It is believed that timely applications of 2,4-D as above recommended can be fully justified on the basis of increased yields and other advantages to be con-

currently derived. In addition, seed formation can be largely or entirely prevented and it may thus be assumed that eventual elimination of this weed-pest for all practical purposes may be expected as a result of continued and systematic control.

It should be emphasized that while sugarcane suffers no measureable damage from applications of 2,4-D in dosages required for the control of tie-vines and other susceptible weeds, most broad-leaved plants including some important field crops, truck crops and ornamentals, can be severely injured by relatively light applications. Controlled experiments described above were conducted on areas of sugarcane safely removed from broad-leaved crops and ornamentals under relatively calm atmospheric conditions.

Any person intending to make use of 2,4-D in Louisiana should obtain a copy of the regulation specifying conditions under which allowable forms of the chemical may be applied. This regulation, dated July 1, 1948 was issued by State Commissioner of Agriculture W. E. Anderson under provisions of Act 112 of the 1948 session of the Louisiana State Legislature.

* The authors are indebted to Aerial Insecticiding, Inc., and their representative, Mr. Olin Longcoy, for applying the spray treatments in controlled experiments; to Southdown Sugars, Inc., and South Coast Corporation, for their helpful cooperation in conducting the experiments; and to Dow Chemical Company and American Chemical Paint Company for supplying the chemicals.

[1] Arceneaux, George, and Hebert, L. P. "2, 4-D as a means of controlling weeds on sugarcane lands". Sug. Bull.; 24 No. 9; 65-70. February 1946.

## IN WASHINGTON

(Continued from Page 83)

sions in rates of duty on sugar imported into the United States be made on other than a contingent basis. Specifically, in conducting these negotiations, the Government should keep in mind that the import quotas upon which the domestic sugar industry must rely as a substitute, in part, for import duties adequate for its protection will expire on December 31, 1952, and under certain circumstances may be suspended at any time.

In the first reciprocal trade agreement which provided for a reduction in the rate of duty on sugar, recognition was given to the purpose and temporary nature of import quotas on sugar. This policy has not been followed in subsequent agreements. Consequently, the domestic sugar industry has been placed in the precarious position of having adequate tariff protection withdrawn with no assurance that protection by means of import quotas will be maintained.

For convenience, the five reductions made in the rate of duty on sugar enacted in the Tariff Act of 1930 are here reviewed briefly:

The first of the five reductions, effective June 8, 1934, was made by the President under the flexible provisions of the Tariff Act of 1930. By that action the rate of duty on 96° raw sugar imported from foreign countries other than Cuba was reduced from $2.50 to $1.875 a hundred pounds, and the duty on Cuban 96° raw sugar was cut from $2.00 to $1.50 a hundred. Domestic producers of sugar beets and sugarcane were not, however, left without compensation against the impact of the lower rate of duty. On the same day the President signed the Executive Order reducing the rate of duty he also approved the so-called Jones-Costigan Amendment to the Agricultural Adjustment Act of 1933, which established a system of quotas and specified that a processing tax should be imposed on sugar at a rate not greater than the reduction of the duty. Proceeds of the tax were used to make benefit payments to growers of sugar beets and sugarcane so that the protection afforded domestic sugar producers might be maintained and, to quote the President, they might obtain "a fairer return for their product." Except for a brief interval in 1939, quotas remained in effect from 1934 until shortly before the attack which brought the United States into the war, and they have been the principal stabilizing influence in the sugar industry.

The second reduction in duty became effective September 3, 1934, in the reciprocal trade agreement between the United States and the Republic of

Cuba. Under that agreement the rate of duty on Cuban raw sugar was reduced from $1.50 to $0.90 a hundred pounds. However, the agreement also contained a certain measure of protection for the domestic producer since it provided that duty would revert to $1.50 a hundred pounds whenever sugar quotas became inoperative. The value of that provision was demonstrated in September of 1939 when, with the outbreak of the war in Europe, it was deemed advisable to suspend quotas temporarily. The duty reverted to $1.50 and continued at that level until the quotas were reinstated on December 26, 1939.

The third reduction in duty came with the proclamation of a supplemental trade agreement with the Republic of Cuba, effective January 5, 1942. In that agreement the rate of duty was reduced from $0.90 to $0.75 a hundred pounds, and the requirement that a higher rate of duty must prevail when quotas became inoperative was completely eliminated.

The fourth reduction in the duty was written into the reciprocal trade agreement between the United States and Peru, effective July 29, 1942, which reduced the rate of duty on 96° raw sugar imported from foreign countries other than Cuba from $1.875 to $0.9375 a hundred pounds. The rates of duty in the Peruvian agreement were applicable to all most-favored nations.

The fifth reduction in the duty on sugar was made effective on January 1, 1948, in connection with the General Agreement on Tariffs and Trade. As so reduced, the rate of duty on 96° raw sugar imported from foreign countries other than Cuba is $0.6875 per hundred pounds and duty on Cuban 96° raw sugar is $0.50 per hundred pounds. The current rates of duty on sugar, considered alone, as previously stated, are wholly inadequate to maintain domestic production.

In recent years differences in costs of production, once a yardstick for measuring tariffs, have been completely ignored. Nevertheless, it seems worth while to point out that the last investi-


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gation by the United States Tariff Commission, completed in 1934, indicated that the difference in costs of production between the United States and Cuba was $1.50 a hundred pounds. In view of higher wage rates, higher taxes, and higher costs of all kinds in all domestic sugar producing areas despite increased costs in foreign areas, it is a fair assumption that the differences in costs today are at least as great as they were at the time of the Tariff Commission's study. Yet the present rate of duty on Cuban sugar of $0.50 a hundred pounds equals only one-third of the difference in costs of production, as determined by the Commission, and only 25 percent of the rate established by the Tariff Act of 1930.

The need for protection of the domestic industry against foreign sugar is a reality. It arises from a number of causes, but greater efficiency on the part of foreign producers is not one of them. Foreign producing areas have advantages in lower wage rates, cheaper land, and lower taxes, but they can claim no superiority over domestic producers either in the yield of sugar per acre or the utilization of labor. On the contrary, an average acre of cane or beets in the United States produces more sugar than an acre of cane in Cuba and the domestic sugar is produced with more efficient use of higher-priced labor. Minimum wages for field labor in the domestic sugar industry are established by the Secretary of Agriculture. Factory wage rates are subject to the standards established by Federal law, and in most cases, are higher than the legal requirements.

In the face of successive reductions in duties, the continued operation of the domestic sugar industry in the period immediately before World War II—1935 to 1941—was possible only because of the maintenance of the quota system, now embodied in the Sugar Act of 1948. The Sugar Act expires on December 31, 1952, and domestic producers have no assurance that adequate protective legislation will be enacted. A further reduction of the tariff on sugar in these circumstances—

even a continuation of the present inadequate rates in the absence of quotas—would be a matter of grave cocern to all divisions of the domestic industry.

The domestic sugar industry would also be disturbed by any reduction in the existing tariff on molasses. During the past several years, the value of byproduct molasses, in many instances throughout the domestic industry, has proved to be the difference between operations at a profit and operations at a loss. While molasses has sold at high favorable prices during this period, the prospect is for a gradual return to prewar price levels, under which molasses sold for little more than 10 percent of its recent value. While the tariff on molasses is relatively minor, it can be expected to assume increasing importance as the price falls. Molasses outlets already are confronted with rapid replacement by synthetic alcohol, and any lowering of the tariff which would encourage foreign molasses to enter the country in greater volume than at present would necessarily increase the difficulties of marketing molasses of domestic origin.

For the reasons given, the undersigned are strongly opposed to any further reduction in the tariffs on sugar and molasses and urge that all reciprocal trade agreements provide, by amendment if necessary, that all concessions in the tariff on sugar shall be suspended during any period in which the quotas under the Sugar Act of 1948 are not in effect, and shall terminate with the expiration of that Act on December 31, 1952.

Very truly yours,

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# IN WASHINGTON WITH C. J. BOURG

## Secretary Establshes 7,250,000 Tons

The ESTIMATE OF CONSUMPTION for 1949 is 7,250,000 short tons, raw value. We congratulate and commend the Secretary of Agriculture on a good job! Without awaiting to see what the market actually does, we recognize the declared indication by the Secretary that he thinks the market should be higher.

We consider it significant that the Secretary should mention that the "sugar prices declined during 1948 while costs of production processing and transportation generally increased." That is definitely true and under Section 201, *must* be taken into account. He further directs attention to the fact that "current prices are somewhat *below* the relative levels indicated in the Sugar Act as a consideration in determining sugar requirements." "In fact," he declares voluntarily, "they are below $8.40 per hundred pounds which was the *price prevailing when price control was discontinued.*" With all costs higher, $6.32 and $8.40 become minimum prices. Next he expresses the expectation and the apparent hope that "in view of the reduction in stocks, however, it is expected that *the demand for quota sugar will improve substantially.*"

Finally, Secretary Brannan confidently declares that "the announced determination will achieve the objective set forth in the Sugar Act of providing a supply of sugar for the year at prices which will 'not be excessive to consumers and which will fairly and equitably maintain and protect the welfare of the domestic sugar industry.'" Should the market be slow to react, we have every confidence that the Secretary will reduce further his estimate until the market is stimulated and restored to above $8.40 for refined and $6.32 for raws.

The press release follows:

Secretary of Agriculture Charles F. Brannan Dec. 23rd announced the determination that 7,250,000 short tons, raw value, of sugar will be needed to meet the requirements of consumers in the continental United States for the calendar year 1949. The final determination for 1948 was 7,200,000 tons.

Under the provisions of the Sugar Act of 1948, the Secretary is required to determine in December the amount of sugar needed to meet the requirements of consumers during the following calendar year. The Sugar Act of 1948 specifies several factors which the Secretary must take into consideration in making this determination. These include: the quantity of sugar distributed for direct-consumption during the twelve months ending the previous October 31; deficiency or surplus in inventories of sugar in the United States; changes in consumption because of changes in population and demand conditions; and the relationship between the price of sugar and the cost of living in 1947, before the end of price control. The determination for 1949 was reached in accordance with these provisions of the Act and on the basis of all information available at this time.

Sugar distribution during the twelve months ended October 31, 1948, amounted to 7,124,000 tons. In determining

(Continued on Page 105)

# A PICTURE OF THE MOLASSES SITUATION

*The following article is from a speech made by Mr. Joe Loeffler, before the Sugar Club in New York City on October 26th,* 1948.

*Because of the keen interest in Louisiana at this time regarding Blackstrap we feel that the readers of the Sugar Bulletin will enjoy the clear overall picture of the molasses situation shown by Mr. Loeffler in this article.—(Editor.)*

I appreciate very much the honor of addressing you on the subject of molasses. I am sure that all of you connected with the sugar industry have heard many definitions of molasses.

The Cuban sugar producers, the Hacidadoes, this year might define it—A by-product of sugar that accounts for 25% to 40% of our net profits. The domestic sugar producers—refiners, beet and cane sugar producers—might define it as the by-product that requires specific storage arrangements, or it might be the start of a Black Sea in America. Noah Webster might define it as the residual liquid product obtained in the process of extracting raw crystalline sugar from the concentrated juice of sugar bearing plants, principally sugar cane and sugar beets.

Of course to the above broad definition should also be added the residual liquid product obtained from the refining of raw sugar.

The term "Blackstrap" is used to designate the molasses recovered from sugar cane after the raw sugar has been extracted.

"Refiners Blackstrap Molasses" or "Barrel Syrup" is the designation given the liquid product produced in the refining operation of raw cane sugar.

Beet molasses is the residual liquid obtained in the extraction of sugar from the sugar beet. The residue from first extraction direct from the beet is called "Straight House Beet Molasses". The molasses obtained can be then treated with chemicals under a so-called Steffens process and the residual product is called Steffens Beet Molasses. This Steffens beet molasses can be again treated and further sugar extracted under the Barium Process and the residual product is called Barium waste water or Barium Molasses. The Barium molasses is high in protein but low in sugar content and is utilized mainly for fertilizer or on beet pulp. There is only one Barium plant in the United States—located in Johnstown, Colorado, where 30,000 to 50,000 tons of Steffens molasses is utilized to make 10,000 to 15,000 tons of sugar. Recently an Ion Exchange process is being used at several—three or four—to be exact,—plants where the juice of the beets is treated with certain resins to increase the sugar extraction and reduce the molasses. It is still too early to accurately state whether or not the process is commercially successful or what effect the process has on the molasses produced therefrom. The molasses produced so far has been intermingled with other molasses.

Another designation you have heard is "Invert Molasses" or Hightest molasses. This product is cane juice which is handled exactly as it would be for the extraction of raw sugar until it is passed the evaporators. After passing the evaporators and without extracting any raw sugar, the liquid is treated with acid or a special invertase yeast which inverts the normally crystalline sugars in the liquid so that after going over the pans little or no crystallization can take place, which renders it possible to ship in tank steamers or tank cars; and the sugar will remain in suspension.

Most molasses is or can be made edible by certain treatment—filtering or blending to fit for the specific grades required.

Since all molasses can be traced back to a growing plant, the sugar, protein, ash and other factors vary with crop conditions and localities. In addition the factory processing the sugar has an important bearing on these factors.

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# BLACKSTRAP MARKETING PERIOD EXTENDED

*Amendment to Determination of Fair and Reasonable Prices for* 1948 *Crop of Louisiana Sugarcane*

Pursuant to the provisions of Section 301(c)(2) of the Sugar Act of 1948, after consideration of information submitted to the Secretary of Agriculture by the Louisiana Grower-Processor Committee, Section 802.22c is hereby amended to extend to March 31, 1949, the molasses bonus pricing period referred to therein.

### Statement of Bases and Considerations

In the determination of fair and reasonable prices for the 1948 crop of Louisiana sugarcane, under Section 802.22c, it was provided that the pricing period for the molasses bonus would be the pricing period for raw sugar as set forth in Section 802.22a, i.e., Friday, October 8, 1948 (or the Friday within the first marketing week of actual trading) to January 31, 1949.

On November 15, 1948, the Louisiana Grower-Processor Committee representing sugarcane growers and processors in Louisiana, in a resolution to the Secretary of Agriculture, requested that the molasses bonus pricing period be extended by not less than 45 nor more than 60 days. This request was made in the belief that a longer pricing period would tend to allow a more orderly marketing of the 1948 crop molasses production.

After consideration of this request it is deemed fair and reasonable to amend Section 802.22c by extending the molasses bonus pricing period to March 31, 1949. (Sec. 301, 403, 61 Stat. 929, 932; 7 U.S.C. 1131, 1153.)

Issued this 15th day of December, 1948.

/s/ A. J. LOVELAND,
*Acting Secretary of Agriculture*

# GOVERNMENT CROP ESTIMATES FOR 1948

The official reports on the estimated production of sugarcane and sugar beets in the United States for 1948 are printed below.

These reports were issued on December 17th, 1948 by Crop Reporting Board of the United States Department of Agriculture.

**Sugarcane for Sugar:** Sugarcane from the 1948 crop to be used for sugar making is now estimated at 5,778,000 tons. This is made up of 4.734,000 tons in Louisiana and 1,044,000 tons in Florida. The volume of sugarcane thus used last year totaled 3,922,000 tons in Louisiana and 920,000 tons in Florida. Sugar production from cane ground from this year's crop is now expected to be 371,000 tons in Louisiana and 87,000 tons in Florida, totaling 458,000 tons, 96 degree raw basis. Last year's production totaled 376,000 tons, consisting of 297,000 tons in Louisiana and 79,000 tons in Florida.

Lack of sufficient rainfall until late August severely retarded early season cane growth in Louisiana and the crop never fully recovered. Yield per acre is now expected to average 18.0 tons, compared with 15.2 tons for the hurricane damaged crop of last year and the 10-year average of 19.2 tons. Yield per acre in Florida this year, now estimated at 29 tons, is above last year but below the average.

Cane grinding is well advanced in Louisiana and progressing in volume in Florida.

**Sugarcane Sirup:** Production of sugarcane sirup in 1948 is estimated at 13,790,000 gallons. This is the smallest crop of record for 1940 when 13,360 gallons were produced. Last year's production was 20,270,000 gallons and the 10-year average production is 21,113,000 gallons.

This year's low production results mainly from a 28 percent decrease in harvested acreage from last year. Acre-

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# FINAL SUGAR QUOTAS FOR 1948

UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
TITLE 7—AGRICULTURE
Chapter VIII—Production and Marketing Administration (Sugar Branch)
[General Sugar Quota, Regs., Series 10, No. 1, Amdt. 8]
PART 821—SUGAR QUOTAS
Sugar Quotas for 1948

*Basis and purpose.* This amendment is issued pursuant to the Sugar Act of 1948 and is made for the purpose of prorating area deficits which are hereby determined. Section 204 (a) of the act provides that the Secretary shall from time to time determine whether any domestic area, the Republic of the Philippines, or Cuba will be unable to market its quota. If he so finds, the quotas for the domestic areas and Cuba shall be revised by prorating an amount of sugar equal to any deficit so determined to the other such areas on the basis of the quotas then in effect.

Since the Sugar Act provides that the quota for any domestic area, the Republic of the Philippines, Cuba, or other foreign countries as established under the provisions of section 202 shall not be reduced by reason of any determination of deficit, and makes the proration of such deficits a mere mathematical computation, it is hereby determined and found that compliance with the notice and procedure requirements of the Administrative Procedure Act is unnecessary. Furthermore, in order to afford shippers in affected countries an adequate opportunity to ship the additional sugar authorized by this amendment, and thereby protect the interest of consumers, it is essential that this amendment be made effective immediately. Therefore, it is hereby found and determined that compliance with the effective date requirements of the Administrative Procedure is impracticable and contrary to the public interest and the amendment herein shall become effective on the date of its publication in the *Federal Register.*

By virtue of the authority vested in the Secretary of Agriculture by the Sugar Act of 1948 (7 U. S. C., Supp. I, 1100) and the Administrative Procedure Act (60 Stat. 237) General Sugar Quota Regulations, Series 10, No. 1 (13 F. R. 133) as amended (13 F. R. 1303, 3109, 4009, 4660, 5015, 5205 and 6043) are hereby further amended by changing paragraphs (i) and (j) of § 821.5 to read as follows:

§ 821.5 *Determination and prorations of area deficits.* * * *

(i) *Deficit in quota for domestic sugar beet area.* It is hereby determined, pursuant to subsection (a) of section 204 of the act, that for the calendar year 1948 the domestic beet sugar area will be unable by an amount of 160,000 short tons of sugar, raw value, to market the quota established for that area in § 821.3 and paragraph (a) of this section.

(j) *Proration of deficit in quota for the domestic beet sugar area.* An amount of sugar equal to the deficit determined in paragraph (i) of this section is hereby prorated, pursuant to subsection (a) of section 204 of the act, as follows:

| Area: | *Additional quotas in terms of short tons, raw value* |
|---|---|
| Puerto Rico | 41,320 |
| Cuba | 118,680 |

*Statement of Bases and Considerations*

*Area deficits* — (1) *Domestic beet sugar area.* Amendment 7 to General Sugar Quota Regulations, Series 10, No. 1, issued on October 11, 1948, declared a deficit for the domestic beet sugar area of 100,000 tons on the basis that this area delivered only 71% of its total quota during the period January through September, 1948, whereas in the like period for 1935 to 1947 inclusive, beet sugar deliveries averaged 75.2% of calendar year total marketings. It was shown further that the marketing of 433,000 tons would be required in the

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# AREA SUGAR QUOTAS ESTABLISHED FOR 1949

The U. S. Department of Agriculture announced on December 29 sugar quotas by domestic and foreign producing areas for the calendar year 1949 under the Sugar Act of 1948. These quotas are established on the basis of (1) the determination announced on December 23, 1948, that 7,250,000 short tons of sugar, raw value, are needed to meet the requirements of consumers in the continental United States and (2) a deficit of 125,000 short tons, raw value, in the statutory quota for the Philippines.

The adjusted quota for the Philippines is 857,000 short tons, raw value.

The quota for Cuba is 2,091,550 short tons, raw value, and for "Other Foreign Countries" is 33,450 short tons, raw value. The quotas for all domestic areas are the amounts shown in the Act.

All quotas in terms of short tons, raw value, are shown in detail in the table on the reveres side of this sheet.

| Production Area | Basic Quota | Proration of Deficit in Quota for Philippines | Adjusted Quota |
|---|---|---|---|
| | (short tons, raw value) | | |
| Domestic Beet Sugar | 1,800,000 | | 1,800,000 |
| Mainland Cane Sugar | 500,000 | | 500,000 |
| Hawaii[1] | 1,052,000 | | 1,052,000 |
| Puerto Rico[2] | 910,000 | | 910,000 |
| Virgin Islands | 6,000 | | 6,000 |
| Philippines[3] | 982,000 | (125,000)[6] | 857,000 |
| Cuba[4] | 1,972,800 | 118,750 | 2,091,550 |
| Other Foreign Countries[5] | | | |
| Belgium | 160.4 | 36.6 | 197.0 |
| Canada | 307.4 | 70.2 | 377.6 |
| China & Hongkong | 157.0 | 35.8 | 192.8 |
| Czechoslovakia | 143.5 | 32.7 | 176.2 |
| Dominican Republic | 3,633.9 | 829.2 | 4,463.1 |
| Dutch East Indies | 115.2 | 26.3 | 141.5 |
| Guatemala | 182.5 | 41.6 | 224.1 |
| Haiti, Republic of | 502.2 | 114.6 | 616.8 |
| Honduras | 1,870.5 | 426.9 | 2,297.4 |
| Mexico | 3,287.0 | 750.0 | 4,037.0 |
| Netherlands | 118.7 | 27.1 | 145.8 |
| Nicaragua | 5,569.7 | 1,271.1 | 6,840.8 |
| Peru | 6,056.4 | 1,382.1 | 7,438.5 |
| Salvador | 4,473.1 | 1,020.8 | 5,493.9 |
| United Kingdom | 191.1 | 43.6 | 234.7 |
| Venezuela | 158.0 | 36.1 | 194.1 |
| Other Countries | 23.4 | 5.3 | 28.7 |
| Unallotted Reserve | 250.0 | 100.0 | 350.0 |
| Subtotal | 27,200.0 | 6,250.0 | 33,450.0 |
| Total | 7,250,000 | | 7,250,000 |

[1] Of Hawaii's adjusted quota, 29,616 tons may be direct-consumption sugar.
[2] Of Puerto Rico's adjusted quota, 126,033 tons may be direct-consumption sugar.
[3] Of the Philippines' adjusted quota, 59,920 tons may be direct-consumption sugar.
[4] Of Cuba's total adjusted quota, 375,000 may be direct-consumption sugar.
[5] Original quotas for "All other foreign countries" may be filled with direct consumption or with raw sugars. Prorations of the Philippine deficit to "All other foreign countries" may be filled only with raw sugar.
[6] Deduct this amount from original quota.

# PUBLIC HEARINGS ON 1949 SUGAR BEET WAGES AND PRICES

The U. S. Department of Agriculture announced December 21st that in accordance with the Sugar Act of 1948, four public hearings on wage rates and prices for the 1949 crop of sugar beets will be held between January 3 and January 10, 1949, in cities within the major producing regions of the sugar beet area. The designated cities, dates, and places of hearings are as follows:

Detroit, Mich., January 3, 1949; 10 a.m., Court Room 859, Federal Bldg.

Greeley, Colo., January 5, 1949; 10 a.m., Council Room, City hall

Salt Lake City, Utah, January 7, 1949; 10 a.m., Room 230, Federal Bldg.

Billings, Mont., January 10, 1949; 10 a.m., Commercial Club Bldg.

The series of hearings in the four cities will be considered as one hearing and testimony at each of the designated places will constitute a part of the same record. Persons who intend to testify may, therefore, present testimony at any one of the designated places. Public hearings on the same matters for the California sugar beet producing region were held October 27, 1948.

One of the conditions to be met in qualifying for payments under the Sugar Act is that producers must pay in full all persons employed in the production, cultivation, and harvesting of sugar beets and at rates not less than those determined to be fair and reasonable by the Secretary of Agriculture after public hearing and investigation. The Act

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# THE WORLD SUGAR OUTLOOK

*The following very interesting paragraphs have been taken from the Market Letter of M. Golodetz & Co., dated December 6th.*

Harvesting of the 1948 sugar beet crop in the United States started early October. According to the latest reports on crop conditions, the yield of beets is expected to reach only 10 million short tons, compared with 12½ million last year. The indicated 1948/1949 sugar production from the present crop is around 1,450,000 short tons, compared to 1,883,746 tons produced in 1947/1948.

Distribution of sugar in the Continental United States from January 1st to November 27th amounted to 6,757,279 short tons against 7,097,100 during the comparable period in 1947.

Production of Argentina, which during the past two years has shown a notable increase, has met with a setback this year which is reported to be partly due to a severe drought and also, to a considerable extent, to the cane growers receiving, during the past sugar campaign of the sugar cane on a weight basis and not on the sugar contents as practiced previously. Cane growers, therefore, fertilized the ground heavily in order to obtain the highest possible tonnage and, no more being concerned about actual sugar contents of the cane, are reported having cut the cane with much less care, at the expense of extractable sugar. Sugar production is, therefore expected to be about 70,000 tons below last year's actual figure of 606,000 tons so that Argentina would have to import sugar to the extent of the above mentioned production deficit unless consumption, which is running pretty high at about 600,000 tons, is reduced. It appears that grinding operations had to commence this year sooner than usual, in June 1948, in order to satisfy consumption demands. The Argentina sugar industry is subsidized to the extent of about fifty per cent, so that the consumer is receiving sugar at a price considerably below actual cost of production. Sugar imports would constitute a considerable drain on the dollar resources of the Republic if the consumption demand of about 600,000 tons is to be satisfied and suggestions have, therefore, been made to curb consumpton by an increase of the price to the consumer.

Our friends in Australia inform us that owing to the very serious cyclonic storm and record floods throughout the northern district, the new South Wales crop was reduced by the equivalent of some 10% of sugar, however, as a result of a most favorable season in Queensland, the total Australian crop in 1948/1949 is now expected to yield 910,000 long tons of raw sugar, as compared to 600,000 tons in 1947/1948. On the total sugar produced, about 500,000 tons will be required for home consumption and the balance will be shipped under the contract with the United Kingdom.

Total world sugar production is indicated by the U. S. Department of Agriculture at 33,655,000 long tons, which is about 11% above actual production of 30,240,000 long tons during the 1947/1948 season. Major increases are expected in Europe, the Far East and Australia. The increase in Europe of over two million tons is recruited by about 100,000 tons in Great Britain, 300,000 tons in Czechoslovakia, 200,000 to 250,000 tons in France, 100,000 tons in Belgium, 50,000 tons in Poland, 60,000 to 80,000 tons in Italy, over 100,000 tons in Spain, over 500,000 tons in Germany, about 350,000 tons in Russia and less important increases in the other European countries of production. In the Far Eastern region, India is credited with about an increase of 200,000 low grade sugar (Gur) and 300,000 tons of white sugar. Production in Java is expected to yield about 150,000 tons more than last year and Formosa, about 200,000 tons more, whilst Philippine production is about 300,000 tons above last year's 355,000 tons. Among countries in the Western Hemisphere credited with major increases is Hawaii, with an increase of nearly 100,000 tons,

Mexico with about 80,000 tons and Brazil with about 100,000 tons. Major decreases are reckoned with in Cuba, namely, 500,000 to 750,000 tons and the U. S. domestic beet crop is likely to be 400,000 tons below last year's figure.

## IN WASHINGTON

(Continued from Page 99)

the quantity required for 1949, consideration was also given to the fact that distribution for the calendar year 1948 will probably be around 7,300,000 tons.

High consumer incomes and a continued growth in population should be reflected in the demand for sugar during 1949, and these facts were considered in reaching the determination of requirements. Because the high consumer purchasing power which prevailed in 1948 is expected to continue approximately at that level during the coming year, the determination makes no allowance for any further increase in consumer demand.

Stocks of sugar held by refiners may be considered as normal under present conditions. Other sugar inventories are also believed to be at normal levels. Therefore, no allowance has been made for either a surplus or a deficiency in inventories.

Sugar prices declined during 1948 while costs of production, processing and transportation generally increased. Current prices are somewhat below the relative levels indicated in the Sugar Act as a consideration in determining sugar requirements. In fact, they are below $8.40 per hundred pounds, which was the price prevailing when price control was discontinued. In view of the reduction in stocks, however, it is expected that the demand for quota sugar will improve substantially and that the announced determination will achieve the objective set forth in the Sugar Act of providing a supply of sugar for the year at prices which will "not be excessive to consumers and which will fairly and equitably maintain and protect the welfare of the domestic sugar industry."

## PRODUCTION ESTIMATE

(Continued from Page 101)

age used for sirup production in Louisiana this year is only slightly more than one-third of that used for sirup in 1947. Yield per acre is less than last year in all producing States except Alabama and Mississippi.

**Sugar Beets:** Sugar Beet production is estimated at 9,418,000 tons, or 25 percent below last year's record production of 12,504,000 tons. Abandonment was rather heavy, averaging over one-eight of the planted acreage. Yield on the other hand at 13.5 tons per acre was the third highest of record, exceeded only by the yields of 14.2 tons in 1947 and 13.7 tons in 1941. California, with an increase of 11 percent in harvested acreage and with its relatively high yield compared with other areas was largely responsible for the high United States yield per acre. The United States acreage harvested was 700,000 acres compared with 881,000 acres last year.

Acreages in all the Lake States were down from about 20 to 60 percent while the yields were higher than a year ago except in Wisconsin.

All of the West North Central States except North Dakota showed declines in acreage from 1947. However, yields were above the previous year except in Kansas.

California was the only Western State showing an increase in acreage over the previous year. Much of this increase resulted from a sharp increase in the acreage planted in the fall of 1947 for harvest in 1948. The fall acreage harvested in 1948 was about 4 times that harvested in 1946. Fall plantings have now become a sizeable portion of the total California sugar beet acreage.

The 1948 yields were down from last year in all of the Western States except Montana. Production in this area was much less than the previous year because of the sharp drop in both acreage and yield.

# THE MARKETS

(December 28th, 1948)

After waiting half the month of December for the Secretary of Agriculture to do something about quotas, sellers of sugar apparently drifted into a frustration complex about the middle of the month and the New York spot quotation dropped from a high of 5.73 on December 6th to 5.60 on December 15th before the attack of "nerves" subsided.

The slip in the New York quotation brought the Louisiana price down with it and the 5.65 price prevailing on the 10th was down 10 points to 5.55 by the 15th. On December 22nd two sales of Louisiana raws were recorded at 5.52, three points under the adjusted New York price for that day.

On December 23rd, after the close of the future market, the Secretary of Agriculture finally got around to announcing that 7,250,000 short tons of sugar, raw value, was his initial quota estimate for 1949. The New York market immediately advanced 5 points to 5.65 and this advanced the New Orleans basis price to 5.60.

A quotable sale of Louisiana raws to a local refiner at 5.60 was recorded on December 27th and again today. The 5.60 price is prevailing as we go to press.

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Reaction to the quota announcement has been erratic. Futures advanced sharply on Christmas Eve averaging about 10 points up for the day but no new advances have taken place since then. The general consensus of opinion seems to be that the announcement was of a "bullish" nature, not entirely because of the 7,250,000 ton figure, but because of the fact that the Secretary of Agriculture stated in his official release that current sugar prices are below the relative levels indicated in the Sugar Act.

Cuban raws for February and March delivery have sold in New York at 5.70 delivered, duty paid.

The official period for marketing Louisiana blackstrap molasses has been extended by the Secretary of Agriculture to March 31st, 1949 and this seems to have relieved some of the selling pressure that has plagued the market since the start of the present grinding campaign. It probably would be a misstatement, however, to report this market as "stronger" because no sales have been recorded since our last report and buyers and sellers are apparently both on the sidelines awaiting developments. Daily quotations remain unchanged at 9 cents a gallon in bulk f.o.b. plantation at this writing.

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The officials quotations of both the Cane Products Trade Association and the Louisiana Sugar & Rice Exchange since the start of the pricing period have been as follows:

Week ending October 14th, 1948: Raws 5.55, Blackstrap, no quotation.

Week ending October 21st, 1948: Raws 5.58, Blackstrap 17.5 cents.

Week ending October 28th, 1948: Raws 5.63, Blackstrap 17.0 cents.

Week ending November 4th, 1948: Raws 5.63, Blackstrap 16.5 cents.

Week ending November 11th, 1948: Raws 5.615, Blackstrap 15 cents.

Week ending November 18th, Raws 5.63, Blackstrap 14 cents.

Week ending November 25th, Raws 5.63, Blackstrap 12½ cents.

Week ending December 2nd, 1948: Raws 5.61, Blackstrap 11.3 cents.

Week ending December 9th, 1948: Raws 5.66, Blackstrap 9.4 cents.

Week ending December 16th, 1948: Raws 5.60, Blackstrap 9.05 cents.

Week ending December 23rd, 1948: Raws 5.55, Blackstrap 9 cents.

The season's average thus far for sugar is 5.605, and the season's average for Blackstrap Molasses is 13.12 cents a gallon.

## FINAL QUOTAS

(Continued from Page 102)

fourth quarter to reach total deliveries amounting to 100,000 tons less than the original quota. This level had been exceeded by fourth quarter deliveries in only one year in the past thirteen. During the period January through October 1948, deliveries of beet sugar totalled 1,423,633 short tons, raw value. Continued distribution of beet sugar during the balance of 1948 at the rate prevailing during the first three weeks of November would result in distribution of only 204,000 tons in November-December. The average November-December distribution for the years 1935 through 1947 was 240,000 tons. Of an adjusted beet area quota of 1,687,738 short tons, 264,000 tons would remain to be distributed after November 1. This quantity has been exceeded for these months with one minor exception only in years in which the oncoming crop of beet sugar was much larger than that in prospect from 1948-crop beets. It is, therefore, improbable that the domestic beet sugar area will market more than 1,688,000 tons of sugar in the calendar year 1948. Since the original quota for the domestic beet sugar area, together with the proration of the first deficit in the quota for Hawaii determined in General Sugar Quota Regulations, Series 10, No. 1 (13 F. R. 133), amounts to 1,847,738 short tons of sugar, raw value, it has been determined that the domestic sugar beet area will be unable to market 160,000 short tons of sugar, raw value, of its quota established by such regulations. Therefore, 160,000 short tons of sugar, raw value, have been prorated under section 204 of the act to Puerto Rico, the only domestic producing area able to market in excess of its existing quota, and to Cuba.

*Exclusion of domestic area from prorations.* (1) Since under General Sugar Quota Regulations, Series 10, No. 1, and amendments thereto quota deficits have already been declared for the domestic sugar producing areas of Hawaii and the Mainland Cane Sugar Area, these areas are excluded from the proration of the deficit herein established.

(2) Virgin Islands: Current estimates of production show that the Virgin Islands will be unable to market more than their current quota of 6,159 short tons of sugar, raw value, in the calendar year 1948, and, therefore, this area is excluded from the proration of the deficit herein established.

After giving effect to the changes set forth in General Sugar Regulations, Series 10, No. 1, and Amendments 1 to 8 thereto, the current sugar quotas, in terms of short tons, raw value, for the several domestic sugar producing areas, Cuba, the Republic of the Philippines, and "Other Foreign Countries" are as follows:

**BASIC QUOTAS, PRORATIONS OF DEFICITS AND ADJUSTED QUOTAS FOR 1948 (Short tons, raw value)**

| Production area | Basic quotas[1] | Proration of deficits in quotas | | | | | Adjusted quotas |
|---|---|---|---|---|---|---|---|
| | | First and second Hawaiian | First and second Philippine | Mainland cane | First domestic beet | Second domestic beet | |
| Domestic beet | 1,800,000 | 47,738 | | | (100,000) | (60,000) | 1,687,738 |
| Mainland cane | 500,000 | 13,260 | | (100,000) | | | 413,260 |
| Hawaii | 1,052,000 | (227,000) | | | | | 825,000 |
| Puerto Rico | 910,000 | 44,835 | | 27,601 | 25,825 | 15,495 | 1,023,756 |
| Virgin Islands | 6,000 | 159 | | | | | 6,159 |
| Philippines | 982,000 | | (742,000) | | | | 240,000 |
| Cuba | 1,923,480 | 121,008 | 704,900 | 72,399 | 74,175 | 44,505 | 2,940,467 |
| Other foreign countries | | | | | | | |
| Dominican Republic | 4,736.0 | | 10,494.8 | | | | 15,230.8 |
| Republic of Haiti | 654.5 | | 1,269.4 | | | | 1,923.9 |
| Mexico | 4,283.9 | | 4,067.5 | | | | 8,351,4 |
| Nicaragua | 2,122.5 | | | | | | 2,122.5 |
| Peru | 7,893.3 | | 17,491.4 | | | | 23,384.7 |
| Salvador | 5,829.8 | | 1,776.9 | | | | 7,606.7 |
| Unallotted | 1,000.0 | | 2,000.0 | | | | 3,000.0 |
| Sub-total | 26,520.0 | | 37,100.0 | | | | 63,620.0 |
| Total | 7,200,000 | | | | | | 7,200,000 |

[1] Figures for "Other foreign countries" represent adjusted basic prorations. However, by reason of sec. 204 (c) of the act, each individual country retains its basic proration in effect on Sept. 1.

(Continued on Page 109)

## MOLASSES

(Continued from Page 100)

Gentlemen, because of my friendship for you, and with consideration for past and possible future wounds, I have not mentioned, but I am sure you know, that a little sugar is produced from corn. In this process molasses is also produced. It is called "Hydrol or Corn Sugar Molasses".

You may have also heard of Citrus molasses. This is a product of the juice taken from skins of citrus fruits before drying, after use has been made of the pulp or juice of the fruit.

I believe I have given you most, if not all, of the various names given to various molasses derived from various processes and various origins.

I would like to give you now the products which utilize this molasses. Unfortunately, no accurate record has ever been made. An estimate naturally comprises the opinion of several people both in the production and consumption end. I do not want to burden you with a conglomeration of statistics, especially if they are mostly hearsay. I would, however, like to give some brief synopsis for the calendar year 1948.

Importation this year will be approximately as follows:

| | *Gallons* |
|---|---|
| Cuba | 130,000,000 |
| Porto Rico | 50,000 000 |
| Hawaii | 36,000,000 |
| Mexico | 25,000,000 |
| Peru | 4,000,000 |
| Santo Domingo and Haiti | 20,000.000 |
| | 265,000,000 |

Domestic production will be approximately:

| | *Gallons* |
|---|---|
| Louisiana Cane | 27,000,000 |
| Florida Cane | 8,000,000 |
| Refinery Cane | 25,000,000 |
| Cane | 60,000,000 |
| Hydrol and Citrus Molasses | 15,000,000 |
| Total Domestic | 75,000,000 |

| | *Tons* |
|---|---|
| Beet Molasses | 450,000 |
| Exhausted in Steffenizing and Barium | 280,000 |
| Discard Molasses for sale | 170,000 |
| Used for Feed and Pulp | 20,000 |
| For other industrial uses | 150,000 |

Plus 50,000 tons imported beet molasses from Europe and Canada.

The approximate 200,000 tons of beet molasses will be used 75% for yeast and 25% for citric acid. Approximately 30,000 to 50,000 tons additional will be required to see the consumers of beet molasses thru to November 1, 1949. Part of this will be available May to August out of the Imperial Valley beet crop and the balance must be imported.

Cane molasses has much wider uses. The products made wholly or partially from cane molasses include among others, Ethyl alcohol, Butyl Alcohol and derivatives, animal feeds, edible molasses and syrup blends, yeast, vinegar, Ephedrine, Beverage and denatured Rum, dust extraction products, insecticides, lactic acid, ink and Pharmaceutical products. One has only to endeavor to control the use of molasses to find all of the unheard of uses to which it is put.

To find the main uses for the same 340,000,000 gallons, I would enumerate them as follows:

| | *Gallons* | |
|---|---|---|
| Ethyl Alcohol | 120,000,000 | 37% |
| Butyl Alcohol and derivatives | 40,000,000 | 11% |
| Feed—Mixes and Direct | 140,000,000 | 41% |
| Yeast and Vinegar | 15,000,000 | 4% |
| Denatured and Beverage Rum | 10,000,000 | 3% |
| Edible Molasses and Blends | 8,000,000 | 2% |
| Miscellaneous Uses | 7,000,000 | 2% |
| | 340,000,000 | 100% |

Previous to 1948, Ethyl Alcohol used 60% to 75% of all available cane molasses supplies. However, the extension of synthetic alcohol including Menthenol has increased from an annual pro-

duction in 1939 of 30,000,000 gallons to a rated anual production today of 120,000,000 gallons. These products are made from the by-product of the natural gas and oil industry. Unless molasses price recedes to about 12c per gallon here, this synthetic production will increase. Whether cane molasses can ever regain the ground lost to synthetic alcohol is hard to ascertain, as I understand most of the cost element of the synthetic alcohol is depreciation, and once plants are built, it is hard to see how they will be kept idle as the investment has been made.

The present demoralized price situation on cane molasses can be blamed partially on this synthetic competition and on cheaper grain prices, which necessitated molasses prices being competitive in order to get the maximum amount of molasses put into the mixed feeds. I, personally, feel that the main responsibility rests on the Cuban Sugar Institute. Instead of being a "Single Seller" Agency they have become a "Single Holding" Agency. They accepted and followed well intended, but what turned out to be, bum advice. Because of this advice, they followed a policy of higher pricing their former largest consumers and favoring by price, choice and other special considerations, one concern. Now they find themselves with almost half the crop on hand and unpaid for. And more than half of this amount not even sold. This large visible supply on hand, and another large crop starting in less than three months, is holding prospective buyers off the market awaiting some stabilizing gesture. What it will be, is at this time unforseeable.

This brings me up to the point of predicting prices for next year. Yes, I am going to get out on a limb and predict next year's price action.

The price of Blackstrap during 1949 will, no doubt, please the consumer and displease the producer. On the other hand, though, it may please the producer and displease the consumer. Which is most likely to happen? I don't know.

Thank you very much.

## FINAL QUOTAS

(Continued from Page 107)

(Secs, 204, 403, 61 Stat. 925, 932; 7 U. S. C. Sup. 1114, 1153)

Done at Washington, D. C., this 3d day of December 1948. Witness my hand and the seal of the Department of Agriculture.

I. W. DUGGAN, *Acting Secretary.*

[Seal]

## PUBLIC HEARINGS

(Continued from Page 103)

also provides, as a condition for payment, that processors who are also producers must pay for sugar beets purchased from other producers at prices determined to be fair and reasonable by the Secretary of Agriculture.

So as to obtain the best information possible, the Department requests that all interested persons appear at the hearings to express their views and present appropriate data in regard to wages and prices.

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Vol. 27 NEW ORLEANS, LA., JANUARY 15, 1949 No. 8

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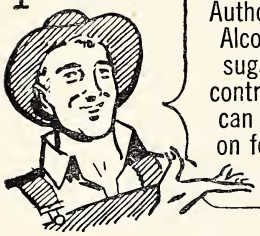

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# MR. BORRON REPORTS ON THE REFUND OF THE GASOLINE TAX FOR FARM USE

I have received several requests for information relative to the constitutional amendment which became effective on December 10, 1948, providing for the refund of the state tax paid on gasoline or other motor fuel used in operating or propelling "farm tractor or farm machinery used in the actual tilling of the soil and production of crops."

Many farmers have already taken steps to avail themselves of this refund, but many have not. This refund will result in appreciable savings where gasoline is used for farm purposes, and all growers should take advantage of their right to obtain the refund. I suggest that all processors notify their growers of this right and of the necessary procedure in connection therewith.

For your information the constitutional amendment reads as follows:

"'(k) Any person who uses gasoline, benzine, naptha, or other motor fuel in the State of Louisiana for operating or propelling any commercial fishing boat, farm tractor or farm machinery used in the actual tilling of the soil and production of crops, on which a gasoline, benzine, naptha or other motor fuel tax has been paid, shall receive a refund from the Collector of Revenue for all State tax paid on such gasoline, benzine, naptha or other motor fuel so used by him, said refund to be made only after the said person has made a certificate setting forth that he has used such gasoline, benzine, naptha or other motor fuel in his commercial fishing boat, farm tractor or other farm machinery used in the actual tilling of the soil and production of crops, and for no other purpose, and further setting forth the number of gallons so used and such other information as may be required by rules and regulations to be prescribed by the Collector of Revenue. Such certificate must be accompanied by bona fide invoices covering the purchase of said gasoline, benzine, naptha, or other motor fuel, and said certificate shall be made and said invoices furnished for said refund on or before January first and July first of each calendar year and presented to the Collector of Revenue on said dates or not later than ten (10) days thereafter. The Collector of Revenue is authorized to prescribe rules and regulations to give effect to this paragraph. The refunds authorized herein shall be made from funds in the hands of the Collector from collections of taxes on gasoline, benzine, naptha, and other motor fuel. Any provision of this Constitution or of any law in conflict herewith is hereby repealed.'"

Although the State Department of Revenue has issued certain forms to be used in obtaining the refund, no instructions or regulations had been issued up until January 4, 1949.

On January 4th, I conferred with representatives of the office of the State Collector of Revenue who will administer this constitutional amendment. I was shown the draft of instructions, both as to procedure and coverage, which will be issued by the Collector's office and should be ready for release within the next day or two.

Based on my discussion and the instructions I was permitted to read, I can advise you as follows:

1. The farmer must first fill out, sign and file with the Department of Revenue, Petroleum Products Tax Division, Capitol Annex, Baton Rouge, Louisiana, Farm PP 14-72 A, entitled "Gasoline Tax Refund Information Blank." These forms may be obtained from your gasoline distributor or oil company from which you purchase gasoline. On filing this form the farmer will be assigned a file number, and no refund is obtainable until this is done.

2. If a farmer operates more than one farm, he may file separate information blanks for each farm or groups

(Continued on page 121)

# LOUISIANA PRODUCTION AND CULTIVATION WAGE RATES FOR 1949

S. D. 282

*Determination of Fair and Reasonable Wage Rates for Persons Employed in Production and Cultivation of Sugarcane in Louisiana During* 1949.

Pursuant to the provisions of Section 301 (c) (1) of the Sugar Act of 1948, after investigation, and due considera- of the evidence obtained at the public hearing held in Thibodaux, Louisiana, on July 22, 1948, the following determination is hereby issued:

802.27 fair and reasonable wage rates for persons employed in the production and cultivation of sugarcane in Louisiana during the calendar year 1949. The requirements of Section 301 (c) (1) of the Sugar Act of 1948 shall be deemed to have been met with respect to the production and cultivation of sugarcane in Louisiana during the calendar year 1949, if the producer complies with the following:

(a) All persons employed on the farm in the production and cultivation of sugarcane during the calendar year 1949 shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates as agreed upon between the producer and the laborer, but not less than the following:

(1) Basic day rates. When the average price of raw sugar is between $5.60 and $6.25 per one hundred pounds, the basic wage rates per day shall be:

| *Class of Work* | *Rate* |
|---|---|
| For all work except as otherwise specified: | |
| Adult females, per 9-hour day | $2.40 |
| Adult males, per 9-hour day | 2.90 |
| Tractor drivers, per 9-hour day | 3.65 |
| Teamsters, per 9-hour day | 2.90 |
| Workers between 14 and 16 years of age, per 8-hour day | 2.20 |

(2) Hourly rates. Where workers are employed on an hourly basis, the rate per hour shall be determined by dividing the applicable day rate in subparagraph (1) of this paragraph (adjusted in accordance with subparagraph (4) of this paragraph) by 9 in the case of adult workers and by 8 for workers between 14 and 16 years of age.

(3) Piecework rates. If work is performed on a piecework rate basis the average earnings for the time involved on each separate unit of work for which a piecework rate is agreed upon shall be not less than the applicable daily or hourly rate provided under subparagraphs (1) and (2) of this paragraph.

(4) Wage rate adjustments when price of raw sugar is more than $6.25 or less than $5.60 per one hundred pounds. For each full 10 cents that the price of raw sugar (duty paid basis) shall average more than $6.25 or less than $5.60 per one hundred pounds for the two weeks' period immediately preceding the two weeks' period during which the work is performed, the rates provided in subparagraph (1) of this paragraph shall be increased or decreased $0.05 per day, respectively: Provided, however. That the average price of raw sugar prevailing during the period from December 17 through December 30, 1948, shall determine the wage rates during the period from January 1 through January 13, 1949, and, thereafter, the wage rates in successive two weeks' work periods shall be determined by the average price of raw sugar prevailing in the immediately preceding two weeks' period.

The two weeks' average price of raw sugar shall be determined by taking the simple average of the daily "spot" quotations of 96° raw sugar (duty paid basis) of the Louisiana Sugar and Rice Exchange and the Cane Products Trade

(Continued on next page)

Association Exchange, except that if the Director of the Sugar Branch determines that for any two weeks' period such average price does not reflect the true market value of raw sugar, because of inadequate volume or other factors, the Director may designate the average price to be effective under this determination.

(b) Perquisites. In addition to the foregoing, the producer shall furnish to the laborer, without charge, the perquisites customarily furnished by him, such as a habitable house, medical attention, and similar items.

(c) Subterfuge. The producer shall not reduce the wage rates of laborers below those determined herein through any subterfuge or device whatsoever.

## Statement of Bases and Considerations

(a) General. The foregoing determination provides fair and reasonable wage rates to be paid by producers to persons employed in the production and cultivation of sugarcane in Louisiana during the calendar year 1949 as one of the conditions for payment under the Sugar Act of 1948. In this Statement the foregoing determination, as well as determinations for prior years will be referred to as "wage determination" identified by the calendar year for which effective.

(b) Requirements of the Sugar Act and standards employed. In determining fair and reasonable wage rates, the Sugar Act requires that a public hearing be held, that investigations be made, and that consideration be given to (1) the standards formerly established by the Secretary under the Agricultural Adjustment Act, as amended, and (2) the differences in conditions among various sugar producing areas.

A public hearing was held in Thibodaux, Louisiana, on July 22, 1948, at which time interested persons presented testimony with respect to fair and reasonable wage rates for sugarcane production and cultivation work during the calendar year 1949. In addition, investigations have been made of the conditions affecting wage rates in Louisiana. In this determination, consideration has been given to testimony presented at the hearing and to information resulting from investigations. The primary factors considered have been: (1) Prices of sugar and by-products; (2) income from sugarcane; (3) cost of production; (4) cost of living; and (5) relationship of labor cost to total costs. Other economic influences also were considered.

(c) Background. Determinations of fair and reasonable wage rates for work in production and cultivation of sugarcane in Louisiana have been issued for each calendar year beginning with 1938. In the 1938 and 1939 wage determinations, specific time rates were provided for adult males and adult females. Beginning with the 1940 wage determination, coverage was extended to tractor drivers, teamsters, and workers between 14 and 16 years of age.

The 1938 wage determination increased basic adult male wages for production and cultivation work 20 cents per day over those of the previous year. An increase in producer income at the same time permitted the maintenance of the customary relationship of wages to income that had existed in prior years. The basic wage rates were not changed during the years from 1938 to 1941 and the wage-income relationship remained relatively constant. Beginning in 1942, the basic wage rates were increased 30 cents per day and have been increased in varying amounts each subsequent year. Throughout the period, wage rates have been established primarily on the basis of the historical wage-income relationship, though in more recent years, alterations have been made to give recognition to significant changes which have occurred in other factors customarily considered in establishing wage rates. Since the base period 1938-49 the weighted average basic time rates for production and cultivation work have been increased from 13.4 cents per hour to 33.0 cents in 1948, an increase of 146.3 percent.

(d) 1949, wage determination. The

1949 wage determination is changed in one major respect from the 1948 wage determination. Wage rates are related to the average price of raw sugar by the use of a modified wage escalator scale. This is in contrast with the fixed wage rate structure in effect in 1948. Under the wage escalator scale, wage rates are geared to the average price of raw sugar (duty paid basis) for the two weeks' period immediately preceding the two weeks' period during which the work is performed. When the average price of raw sugar for a two weeks' period ranges between $5.60 and $6.25 per hundred pounds, inclusive, the wage rates provided in the 1948 wage determination shall be applicable. For each full 10 cents that the average price of raw sugar for a two weeks' period is more than $6.25 or less than $5.60 per one hundred pounds, inclusive, basic day rates are increased or decreased 5c per day. For example, if sugar prices average $5.50 per one hundred pounds, basic day rates are reduced 5 cents. Conversely, if the price is $6.35, wage rates are increased 5 cents. Similar adjustments are made for each subsequent full 10 cent price change. The wage adjustment is computed by applying to the basic weighted average day wage the percentage of increase or decrease resulting from 10 cent changes in the price of raw sugar above $6.25 or below $5.60 per one hundred pounds.

The average price of raw sugar is determined by taking the simple average of the daily quotations of 96° raw sugar (duty paid basis) of the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association Exchange. Such average prices are subject to review by the Director of the Sugar Branch, and if he determines that for any two weeks' period such average price does not reflect the true market value of sugar, because of inadequate volume or other factors, he may designate the average price to be effective. Each producer will be responsible for ascertaining the average price of raw sugar and the effective wage rates. The two weeks' average price of raw sugar and the effective wage rates will be available in the Louisiana State and Parish Offices of the Production & Marketing Administration, Department of Agriculture.

An examination of changes in the economic factors affecting wage rates since the base period 1938-49 reveals that substantial increases have occurred in all such factors; although the price of raw sugar has declined somewhat from the high point reached in 1947 and early 1948. In contrast with the decline in raw sugar prices, producers' costs have continued to increase as has the cost of living for sugarcane workers. In recogntion of such trends, the 1949 wage determination provides a variable wage structure adjustable to significant price and income changes.

At the public hearing on fair and reasonable wages, it was recommended that wage decreases be based upon income of products from sugarcane and molasses. As noted in the Statement of Bases and Considerations accompanying the 1948 harvest wage determination, wherein a similar wage-price correlation was provided, consideration has been given to using income as a basis for the modified escalator scale. It is believed, however, that the use of average raw sugar prices will be readily understood by producers and laborers and will provide a more practicable method of administering this provision. The scale employed in this determination is, therefore, based upon average raw sugar prices.

Accordingly, I hereby find and conclude that the foregoing wage determination will effectuate the wage provisions of the Sugar Act of 1948.

Issued this 3rd day of January, 1949.

A. J. LOVELAND,
*Acting*
*Secretary of Agriculture*

# THE MARKETS

(January 12th, 1949)

The raw sugar markets began the New Year in fine style when prices advanced 10 points in New York to 5.75 and actual sales of Louisiana raws raised the local market to 5.70. For a few days it looked like the predicted climb in prices to the old 6.32 ceiling had begun and this belief was further strengthened when all major refiners announced an advance of 25 points in their list prices to 8.00.

Unfortunately a surprising amount of sugar appeared on the market at the higher prices and by January 5th this had forced the spot quotation in New York back to 5.73. On January 7th the price slipped again to 5.70, and this price, which is equal to 5.65 adjusted to a New Orleans basis, is prevailing as we go to press today.

In the meantime a local refiner purchased Louisiana raws on December 31st, January 4th, and January 5th at 5.70, New Orleans basis.

This puts the shoe on the other foot as far as the quotations of the local exchanges are concerned. Up to now the new pricing rules have served to keep the Louisiana quotations from being considerably less than the New York price adjusted to a New Orleans basis but if the old rules were in effect today the present Louisiana quotation would be 5 points above the prevailing adjusted New York price.

*The new rules, therefore, are proving their fairness to both the buyers, and sellers of Louisiana raw sugars as they continue to accurately reflect the actual market value of raws, delivered New Orleans.*

---

Apparently it is impossible to stop the downward trend of Blackstrap Molasses prices. This market has dropped three-quarters of a cent a gallon to 8¼ cents since our last report and today it is fairly certain that sales in less than quotable quantities (less than 5 tank carload) are being quietly made at 8 cents a gallon in bulk f.o.b. plantation. Blackstrap is now bringing 10 cents a gallon less than it was at the start of the marketing period.

# CROP NEWS BY PARISHES

**West Baton Rouge Parish.** The grinding campaign was completed in West Baton Rouge Parish on January 8th with approximately 355,721 tons of cane ground, according to a report from O. E. Camus dated January 8th. He estimates that the canes have averaged about 23 tons to the acre. Last season West Baton Rouge Parish milled 237,000 tons of cane. About the same number of acres will be used for the coming crop as were used this season. No cane acreage will be abandoned because of adverse weather.

**Iberia Parish.** Reporting from Iberia Parish on January 7th, W. E. Williams advised us that the grinding campaign in his district would be completed about January 15th. He estimates that the cane tonnage milled in Iberia Parish this year will be between 530,000 and 550,000 tons and that the acreage production will average about 16 and a half tons. Last season Iberia Parish milled about 429,000 tons of cane.

Mr. Williams estimates that about 100 acres of cane in his Parish will be abandoned this season because of adverse weather conditions. The planted acreage, he says, is about the same this year as it was last year.

It is interesting to note from Mr. Williams' report that only about 1,000 tons of the cane in his district were used for syrup production this season compared with 56,000 tons used for that purpose last season.

**St. John Parish.** On January 8th V. O. Calandro guessed that grinding operations in St. John Parish would be over about January 15th. He estimates that approximately 286,000 tons of cane will be milled in his district this season compared with a grinding of 245,000 tons last season. The tonnage production will average about 20 tons to the acre this year and the sugar production will probably run about 160 pounds to the ton. It will not be necessary to

abandon any cane acreage in St. John Parish this season, and the acreage devoted to the next crop will be about the same as that used for the crop this season.

**St. James Parish.** Joseph Lamandola mailed his report on January 7th and he estimated at that time that grinding operations in his Parish would be completed about January 15th, with about 350,000 tons of cane milled. Last season 295,000 tons of cane were ground in St. James Parish.

Mr. Lamandola estimates that the tonnage production this season will be between 19 and 20 tons to the acre and that the sugar production will average about 143 pounds to the ton of cane. No cane acreage will be abandoned in St. James Parish this season because of bad weather.

## TAX REFUND

(Continued from page 116)

of farms, but must identify the separate farms or groups of farms by different names in order to avoid confusion in identification.

3. If a farmer has not heretofore filed the information blank above mentioned, he should do so at once. If he files such blank at this time he may thereafter claim refund of the tax paid on gasoline used since December 10, 1948 in operations covered by the Constitutional provision. However, such privilege will be extended only during a period of about sixty days, according to information given me. It is the present policy of the Collector's office that thereafter no refund will be allowed on gasoline used prior to the filing of the information blank.

4. On the information blank above mentioned the farmer must, in the space provided therefor, submit the signature or signatures of the agent or agents who are authorized to sign for the farmer. Only these signatures will be accepted on the certificate which must be placed on the refund invoice (Form PP 14-74) mentioned below, which certification must be signed at the time of the purchase of the tax refundable gasoline.

5. In filling out the information blank the question may arise as to a machine or vehicle used jointly in operations eligible for refund and operations not eligible. I am advised that such machine or vehicle should be listed in both places.

6. On receipt of the information blank the office of the Collector will assign each farmer a file number and will mail full instructions to the farmer as to additional procedure and coverage.

7. At the time of each purchase of gasoline which will be used in tax refundable operations the oil distributor should prepare, sign, have the farmer or his agent sign and give the farmer the form of refund invoice which has been furnished to the distributors by the Collector's office. This is Form PP 14-74. The signed invoice forms must accompany the farmer's application for refund. According to the representatives of the Collector with whom I conferred, the "Purchaser's Declaration" on this form does not mean that all gasoline covered by the particular Refund Invoice must be used for refundable purposes. If a portion is so used and a portion is not so used, accurate record must be kept to indicate the particular use.

8. A claim for refund (Form PP 14-73) can be filed only after you have filed the information blank and been assigned a file number. This form will be mailed the farmer by the Collector's office. The form of claim for refund may be filed as often as each calendar month, but must be filed at least each six months, not later than January 1st and July 1st, or not later than ten days thereafter. The first refundable period is from December 10th to December 31, 1948.

9. Each claim for refund will be based on the gallonage or refundable gasoline *used* during the period covered by the claim and is not to be based on the quantity of gasoline purchased. Refund cannot be claimed on inventory regardless of its intended use.

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10. Adequate records must be kept to indicate refundable usage, in order to substantiate the claim for refund.

11. The form of claim for refund will have each farmer's file number placed thereon and may not be used by any other farmer.

12. The usages which are refundable, in the opinion of the office of the Collector will be set out on the instructions, just prepared by the Collector's office which will be mailed each farmer on receipt of his information blank.

Based on information given me, the Collector will consider generally that all gasoline used in operating agricultural implements or machinery, operated exclusively on the farm is subject to the refund provision. This applies to tractors, harvesters, hoists, flame cultivators and other such machines. If a truck or other vehicle is used exclusively on the farm and does not have a highway license, gasoline used in its operations is subject to the refunding provision. If such vehicle is used on the farm for farm purposes and also on the highway, refund may be obtained on the gasoline used in its operations exclusively on the farm, provided adequate records are maintained on such separate usage. The tax paid on gasoline used in vehicles transporting sugar cane from farm to factory over the public highways is not refundable, in the opinion of the Collector's office.

As to coverage and the procedure to be followed after filing the information blank, I request that you study the instructions to be mailed you by the Collector's office very carefully and rely on such instructions. I make this suggestion for the reason that although I believe the above is accurate, it is based on my conference with representatives of the Collector's office, and I do not have before me a copy of the instructions. I should receive copies of the instructions tomorrow or next day, as I requested that they be mailed me as soon as they were mimeographed.

PAUL G. BORRON, JR.,
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*American Sugar Cane League*

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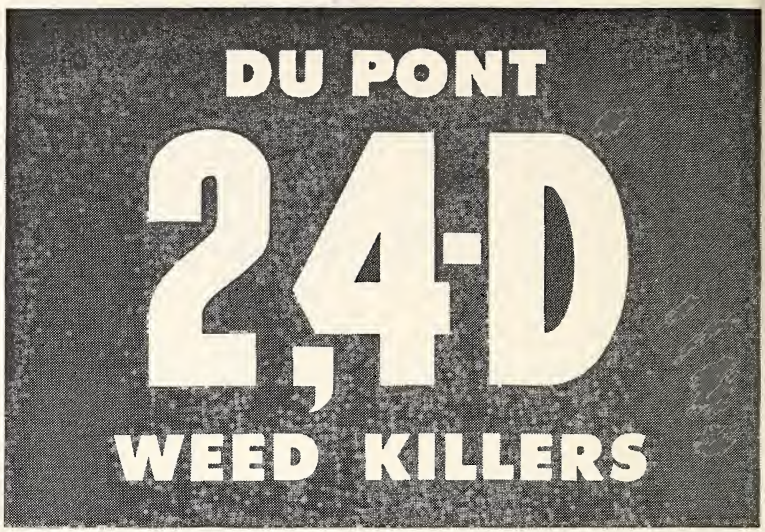


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THE
# SUGAR BULLETIN

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MARCEL J. VOORHIES, Editor

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# RECOMMENDATIONS OF THE JOHNSON GRASS CONTROL COMMITTEE

*F. Evans Farwell, Chairman*

Of the stubble that is not to be kept, plow out as much as possible in the fall. Plant with a winter cover crop. As early in January as possible, plow-out remaining stubble that is definitely not to be kept. Flush this land to center of cut and drill-in suitable cover crop about the first of March. Allow this cover crop to remain until:—Johnson grass starts coming through it; it (cover crop) reaches flowering stage; or insects start heavy destruction of it. After plowing under the cover crop, fallow plow the land whenever the Johnson grass becomes four to six inches high. Continue this plowing until land is planted to cane.

Where a cover crop was planted in the fall, this should be plowed under when Johnson grass starts coming through it. The land could then, depending upon the season, be planted with a spring cover crop as above, or fallowed until cane planting time.

Ditch bank growth should be controlled by cutting, burning, cultivating, spraying with chlorate and chloride mixtures, and any other means available. Ditch bank control is most important to prevent Johnson grass roots from spreading into the field and to prevent the formation of seeds. Cultivate close to the ditch. Try to plant ditch bank rows with good shading and vigorous varieties such as 34/120 and 36/183.

The railroads and highway department are ready and willing to give full cooperation to neighboring farmers who are actively fighting Johnson grass. Contact your railroad agent; he is ready to help.

Where land-use will permit it, three years of grazing gives very effective control.

Corn and beans should not be interplanted in Johnson grass land. Corn alone, closely spaced and heavily fertilized, should be grown on the least weed-infested land.

One season of proper fallow plowing should eliminate all Johnson grass rhizomes and root-pieces, leaving seeds as the main problem. Where seeds are known to be present, two pounds of 2,4-D acid equivalent in 100 gallons of water should be blanket sprayed on each acre IMMEDIATELY after cane is planted. August plant cane may require two applications of 2,4-D with a cultivation in between to properly control seedlings, depending on the season.

In many cases 50 or less gallons of water can be used but the most uniform results have been obtained using 100 gallons. Some seedlings will come up after the spraying but they will be unable to make a normal root growth. 2,4-D inhibits the growth of the storage roots and fall spraying is particularly important in years when the weather stays warm as in 1948.

After the row has been shaved in the early spring and the cane is 5 to 6 inches tall, the drill should be sprayed with 2# acid equivalent in 100 gallons of water per acre. 2,4-D seems to stimulate the growth and suckering of cane. The seedlings that appear can be controlled with a light flame cultivation or the use of one of the rotary types of hoe. It should be borne in mind however that the efficiency of the 2,4-D is destroyed where the surface of the land is broken by tools. The seedlings that appear will have deficient root systems and many will appear paralyzed.

Depending on weather conditions when sufficient suckers are up to a good growth, the row should be cultivated with dirt being thrown up against the cane. This operation should be immediately followed by the drill spraying with 2 pounds 2,4-D acid equivalent. Normally this would be around the latter half of April.

If plowing and spraying were efficiently done, the number of seedlings

(Continued on Page 138)

# 2,4-D AND JOHNSON GRASS SEEDLINGS

*by E. R. Stamper, E. S. Hagood, H. T. Barr, and S. J. P. Chilton, Louisiana Agricultural Experiment Station, Baton Rouge, Louisiana*

The reinfestation of fallow-plowed land with Johnson grass from seedlings is one of the big problems in certain parts of the sugar belt. The use of 2,4-D as a pre-emergence treatment to prevent this reinfestation has aroused considerable interest among plantation operators. A number of fields were sprayed in 1947 and 1948 by Mr. Mayeaux of the Bartlett Chemical Co., by owners of plantations interested in its use and by the Louisiana Agricultural Experiment Station. It seems desirable at this time to bring together the results of these tests, and also certain other tests made by the Agricultural Experiment Station in the fall of 1948, for consideration by those interested in Johnson grass seedling control.

Table 1 summarizes counts of Johnson grass stools present in seven tests where cane planted in fallow-plowed land had been treated with pre-emergence sprays of 2,4-D in comparison with check areas of unsprayed cane. All fields were badly infested with Johnson grass in the previous stubble crop. Applications were made on a field scale with 3-row power sprayers. The Johnson grass stools were counted in August, 1948. In order to have a means of presenting the comparative reinfestations, the number of Johnson grass stools present per foot of row of cane was used. It may be seen that in three of the tests there was control which reduced the number of plants to the point where there was less than 10 per cent reinfestation, while in four tests the reinfestation in treated areas was too high. The average decrease in reinfestation was about 65 per cent, or 1 plant in three surviving where 2,4-D was used.

These results indicate that in areas where Johnson grass seed populations are low in the soil, 2,4-D as a pre-emergence spray may be of value in reducing reinfestation. Where seed populations are high and conditions are favorable for seed germination, it alone may be of dubious value in reducing reinfestation from seedlings.

Where a pre-emergence spray of 2,4-D was used, the seedlings which survived were usually stunted with very poor root systems for a period after they emerged. As an additional aid to 2,4-D in reducing the number of seedlings remaining, it was thought that flaming might offer possibilities. Table 2 gives the results of three tests made in the fall of 1948, where the drills were flamed several weeks after the pre-emergence spray of 2,4-D was ap-

(Continued on Page 137)

**TABLE 1. Results of 2,4-D tests on control of Johnson grass in plant cane in fallow plowed land in 1947-48.**

| Location | Applied | | No. stools per 300 foot row | | No. Plants per foot of row | | Per cent Control |
|---|---|---|---|---|---|---|---|
| | Date | Lbs.[5] 2,4-D/acre | Check | Treated | Check | Treated | |
| E. J. Gay[1], Plaquemine | 10/23/47 | 3.7 | | | | | |
| | 3/20/48 | 2.5 | 35.0 | 17 | 1 ea. 8.6 ft. | 1 ea. 17.7 ft. | 51 |
| Supreme Sugars[1], Tallieu | 10/29/47 | 4.1 | | | | | |
| | 3/30/48 | 2.1 | 107.0 | 52 | 1 ea. 2.8 ft. | 1 ea. 5.7 ft. | 51 |
| Wilbert's (Evergreen), Plaquemine | 10/23/47 | 4.0 | | | | | |
| | 3/25/48 | 2.7 | 105.0 | 37 | 1 ea. 2.9 ft. | 1 ea. 7.3 ft. | 65 |
| Evan Hall[1], Donaldsonville | 10/28/47 | 4.0 | | | | | |
| | 3/24/48 | .7 | 76.0 | 44 | 1 ea. 4.0 ft. | 1 ea. 6.8 ft. | 42 |
| Catherine[1], Port Allen | 10/18/47 | 5.5 | | | | | |
| | 3/26/48 | 1.5 | 389.0 | 98 | 1 ea. 3/4 ft. | 1 ea. 3.1 ft. | 75 |
| Westover[2], [4], Port Allen | Spring | 2.0 | | | | | |
| | Layby | 2.0 | 8.3 | 4 | 1 ea. 36.1 ft. | 1 ea. 75.0 ft. | 52 |
| Smithfield[3], [4], [5] | Fall | 2.0 | | | | | |
| | Spring | 2.0 | | | | | |
| | Layby | 2.0 | 32.0 | 12 | 1 ea. 9.4 ft. | 1 ea. 25.0 ft. | 63 |
| Average, 7 tests | | | 107.5 | 37.7 | 1 ea. 2.8 ft. | 1 ea. 8.0 ft. | 65 |

[1] Bartlett Chemical Co. tests.
[2] E. S. Hagood.
[3] Mr. Barrow.
[4] Over 5000 feet row counted in test.
[5] Acid equivalent per acre blanket spray.

# USE OF CHLORATE FOR JOHNSON GRASS CONTROL

By LEON GODCHAUX, II,

*presented at the second meeting of the Southern Weed Conference*

The use of Chlorate for Johnson Grass Control, as title of this paper, is somewhat misleading in that our discussion will be limited to application in sugar cane production. I will assume some familiarity with this field of activity and will not elaborate on it; suffice it to say, however that Johnson Grass constitutes our most serious problem today in cane production. For example, our LaPlace Plantation, 1500 acres of the best cane land in the state, continuously produces an average of 35 tons of cane per acre. Yet, due almost entirely to Johnson Grass infestation our first year stubble, instead of yielding 20 to 25 tons, currently produces an average of 10 to 12 tons per acre. Furthermore, no second year stubble at all is retained as these yields are even further reduced. I think it safe to say that we could not have continued to exist with such low production figures and the high costs experienced in the heretofore losing battle against Johnson Grass.

As has been stated before by myself and others, the problem of control or elimination of Johnson Grass in sugar cane consists of three or, possibly now, four separate phases. Johnson Grass, since it reproduces in Louisiana both vegetatively and through seed, must be attacked on both counts. The first phase of our program, which has now been in effect for several years with good immediate results, is concerned with elimination of old root systems in our cane fields through the medium of intensive fallow plowing. The second phase of our program is concerned with control of Johnson Grass seedling development in such fallow plowed land after the cane has been planted, in order that our cane fields may not become reinfested. The third phase of the program involves elimination of Johnson Grass on ditch banks, head lands, and other marginal areas in our cane fields in order that reinfestation from these sources be minimized and possibly eventual eradication may be attained. The fourth phase of this over-all control program, which is yet too new to be positive, involves selective elimination of Johnson Grass which has originated from seed in cane fields, which have been fallow plowed and carefully treated for seedling control. In spite of our best efforts, we believe there will be a small percentage of Johnson Grass re-occurrence and, therefore, some suitable means must be provided in order that this small reinfestation may not defeat our intensive efforts and expenditures. The use of sodium chlorate is largely confined to the last two phases of the over-all control program, although I will tell you of a rather interesting observation in connection with Johnson Grass seedling control.

First then, let us consider the use of sodium chlorate or chlorate mixtures in the control of Johnson Grass on marginal lands. Our investigation first started in the summer of 1946 at which time a survey of existing information on herbicides was made. Although there was not a great deal published information on specific killers for Johnson Grass, those which seemed to be more promising, from the standpoint of cost and effectiveness, were selected and applied to small test plots on our ditch banks. Included in this primary screening evaluation were Sodium Chlorate, Atlacide, Ammate, Acidic ferrichloride solutions and one or two others. Results of these tests and examination of relative costs conclusively indicated that chlorate-type poisons were superior to the other materials tried. It was found that the chlorate-type poisons, when applied to Johnson Grass foliage at a rather advanced state of maturity, achieved an excellent kill, not only on the above ground portion of the plant but apparently through translocation succeeded in destroying the extensive underground root systems. This is the type action necessary for control or

eradication since it has been our experience that elimination of the above ground portion of the plant only succeeds in producing more luxuriant regrowth and we believe actually tends to spread the infestation. In 1947 larger scale carefully controlled experiments were continued on ditch banks and head lands in conjunction with 60 acres of cane land on our LaPlace Plantation. Applications of sodium chlorate were made at the rate of ½, 1, and 1½ pounds sodium chlorate per 100 square feet of treated area. Single and double applications at this rate were included in the tests, and results were carefully observed throughout the summer of 1947 and spring of 1948. Our conclusion was that a single application at a rate in excess of 1 pound chlorate per 100 square feet of treated area resulted in the most efficient and most economical kill in that at least 95% control was attained. In the spring of 1948 it was found that light spotting of the remaining few Johnson Grass plants on the treated ditch banks required on the average of only 0.3 pounds chlorate per 100 square feet of area. Continued observation to this date indicates that perhaps even less spotting will be required next spring.

Now as to details of application. We found that a large volume of solution appeared beneficial in that thorough wetting of the foliage is desirable. With this in mind we have standardized an application of 1 gallon of solution to 100 square feet of treated area, furthermore we have in all of our test work, added to the sodium chlorate an amount of calcium chloride. We have not been able to conclusively determine whether the calcium chloride contributes to the effectiveness of our solution, but are content to continue its use in spite of the resultant additional cost in the interests of safety. At this point I think it well to emphasize the already well known fact that sodium chlorate, being a strong oxidizing agent constitutes a serious fire hazard when contaminated with organic matter. Once it is in solution it is relatively safe, but should ones clothing become wet with a sodium chlorate solution and subsequently dry out, the clothing is readily subject to ignition, due merely to the friction generated when walking. Calcium chloride, being a material which picks up water from the atmosphere, tends to prevent complete drying of materials wet with its solution, and in this manner contributes to the safety of handling of sodium chlorate, calcium chloride solutions. In spite of this calcium chloride addition we insist that extreme precaution be observed in our field applications, providing a special suit of clothes for all operators, which is removed and thoroughly washed each night.

Further details of our field practice, which I believe would be of interest, include the actual rates used and our technique in mixing. We have standardized on use of 1.3 pounds sodium chlorate, .7 pounds of calcium chloride dissolved in 1 gallon of solution, said gallon being applied to 100 square feet of area. Our spray equipment includes a 500 gallon tank equipped with agitator and re-circulation, and a device whereby water may be drawn into the tank from the field ditches. Our current practice involves taking the spray machine into the field and bringing the calcium chloride and sodium chlorate along on a wagon. The water is drawn from ditches wherever possible and the dry chemicals are merely dumped into the tank of the spray machine, where they become thoroughly mixed and dissolved in approximately 10 minutes. Incidentally, the calcium chloride used is in flake form and shipped in 100 pounds moisture proof paper bags. The sodium chlorate is shipped in 100 pounds light metal drums.

We have further found that as mentioned above, optimum results are achieved when the solution is applied to matured Johnson grass, preferably near or at the seeding stage. Test applications to Johnson Grass, which had just previously been cut, showed very poor results. Furthermore, application to young Johnson Grass one foot high does not seem to give a good kill. This we believe is due to the

fact that at such a stage of growth there are still numerous, living underground rhizomes which have not yet put forth a shoot above the ground and which are, therefore, not affected by the chlorate solution. We have also found that treated areas should be left undisturbed for a period of 60 to 90 days after spraying, in order to achieve best results, that is, the treated areas should neither be mowed, burned, or ditched until the poison has had sufficient time to do its work. Our procedure has, therefore, been to go in with our ditching machines and bulldozers and shape up our ditches as early as possible in the spring, then allow the Johnson Grass to grow to a reasonable height prior to our chlorate application. Another arrangement which gives satisfactory results is to apply the chlorate as soon in the spring as the Johnson Grass has reached a satisfactory stage of growth, then leaving these treated areas alone and coming in with our ditching equipment 60 to 90 days later.

Now, as regards that vital factor, *cost*. Sodium Chlorate is currently available in carload lots delivered at Louisiana points, for approximately 9¢ per pound; calcium chloride—2¢ per pounds. One gallon of solution, therefore, costs us, roughly 13¢, and as you know will treat 100 square feet of area. The width of a ditch varies, of course, with the cultural technique of the individual plantation, but in order to keep our chlorate costs down we have followed the practice of using ditch bank plows to fallow plow just as close to the ditch as possible. In this manner the old roots are eliminated in this area as they are in the cane field itself, by fallow plowing, and most of our lateral ditches need not be treated for a width of ground more than 4 feet. Assuming a treated area width, then, of 4 feet, and material cost of 13¢ for 100 square feet, we arrive at a cost of $1.09 per lineal acre 4 feet wide (210 ft. long). We have further found that in our own fields, which incidentally are layed out with rather more ditches than we now feel necessary, contain on the average approximately 5,000 square feet of ditch bank area per acre of cultivated cane land. These figures result in a material cost of approximately $6.50 to treat the ditch banks in conjunction with one acre of cane. This is of course only the initial treatment which does most of the work, since as I told you in the second year and in subsequent years it is only necessary to apply .3 pounds of chlorate per 100 square feet or expend 3¢ for materials to treat 100 square feet, or $1.50 to treat the 5,000 square feet of marginal land around an acre of cane. I have some photographs which will give you a fairly good idea of some of this work. We have compared our chlorate costs with the cost of burning ditch banks and find that use of chlorate is cheaper than burning with propane. Furthermore it has been our experience that even very frequently repeated burnings do not eliminate the underground root system of Johnson Grass, and we actually believe that if burnings are rather infrequent, the result is a stimulus to Johnson Grass spread and regrowth. Furthermore, with sodium chlorate it is possible to treat the ditch banks around growing cane fields with no injury to the cane and thereby maintain control throughout the growing season, whereas you all know it is difficult, if not impossible, to get in and burn or mow a ditch bank between two cuts of growing cane late in the spring or summer when the cane has gotten up 4 to 6 feet tall.

What I have said so far, has been concerned with that phase of our control program concerned with eliminating sources of Johnson Grass reinfestation on marginal lands. I would now like to tell you a little bit about the other uses of chlorate in our program, specifically its use in the fourth phase mentioned in our original outline, that is, selective elimination of Johnson Grass in growing cane. This work is relatively new and our experience is limited to tests conducted during the summer of 1948. We are grasping at straws after observing that our first year stubble, when first emerging in the spring, was so terribly infested

with Johnson Grass that we knew a poor yield of cane would result at harvest time. This situation was further aggravated by the fact that we knew it would be necessary to refallow plow these areas after the first year stubble had been harvested and destroyed. We are firmly of the belief that repeated fallow plowing at every planting of sugar cane, will eventually destroy the fertility of our soil since it eliminates the possibility of planting a summer cover crop. Meanwhile we have been, as have others, conducting work on pre-emergence Johnson Grass control in plant cane, and although we have every hope that pre-emergence control will largely eliminate reinfestation of our fallow plowed lands, we never expected to achieve a 100% job. Furthermore with the unpredictable weather conditions in Louisiana, it is entirely conceivable that excess rainfall may at some time or other keep us out of the fields during that critical time when pre-emergence control must be conducted, with the result that our plant cane may well become reinfested from seedling. In any event, we "took the bull by the horns" and sprayed some first year stubble, foliage, and soil with various strength solutions of calcium chloride and sodium chlorate. To our surprise the cane, while considerably affected, survived and came back to make an excellent normal growth, whereas the Johnson Grass was largely destroyed. We immediately, therefore, expanded this work to a larger scale and treated one acre of badly infested first year stubble early in the spring with sodium chlorate, at the rate of ½ pound per 100 square feet, and one acre at the rate of ¼ pound per 100 square feet. As expected the cane turned brown as did the Johnson Grass, but within two to three weeks the cane had put forth new growth and from then on throughout the growing season made its normal growth. The Johnson Grass, on the other hand, was almost entirely eliminated, and I am happy to say that at harvest time the plot treated with ¼ pound chlorate gave us 27 tons per acre and the plot treated with ½ pound gave us 25 tons per acre. Our untreated control gave 19 tons to the acre and our average for the group was 12 tons per acre. These two treated fields are remarkable in that there is now no evidence of Johnson Grass, and we plan to keep these two acres for second year stubble to see what yield might be achieved. Such a treatment need involve only the two foot drill area since the Johnson Grass in the middles, we believe, can be controlled by mechanical cultivation. It is the Johnson Grass growing up in the cane that can not possibly be controlled mechanically or by hand. The cost of such treatment, then, treating on the drill area two feet wide, at the rate of 1/3 pound per 100 square feet means that we need to actually treat only 14,700 square feet of area, or use material, that is, sodium chlorate and calcium chloride, costing a total of $6.33 per acre of cane land. When comparing this figure with our current costs of $12.00 per acre involved in our hoeing, hand cutting, and burning, in an attempt to at least give the cane a chance to come through the Johnson Grass, we can see the savings in cost and increased yield which will result. The only question which we have not, as yet, answered is possible build-up of salts in the soil with eventual sterilization or adverse effect on cane yield. I hesitate to recommend this type treatment on a large scale until we have further experience. Furthermore, such a treatment is only needed when the stubble is thoroughly infested, and I have every reason to believe that our pre-emergence program will largely eliminate such severely infested stubble cane. On the other hand, however, we do feel it immediately practical to spot treat lightly infested stubble cane with chlorate solutions. This work can be done at an extremely low cost per acre and coupled with an effective pre-emergence control program, fallow plowing, and ditch bank control will I believe, complete our efforts to devise a successful over-all program for Johnson Grass control and possible eventual elimination. I have a few photographs of this selective spraying in stubble, in which you may be interested.

# USE OF SHEEP TO CONTROL JOHNSON GRASS

*Letters sent to Mr. F. Evans Farwell*

January 12, 1949

Dear Mr. Farwell:

In reply to your letter of January 5, I must confess to you that you have given me a big order to fill and I hope the limited information that I will give you may be of some benefit to the Louisiana sugar cane farmer.

First, I want to outline briefly the fight that I have been making to try to control Johnson grass. Fifteen or twenty years back, I followed about the same practice that the average sugar cane farmer used, planting corn and beans to build up my land so that I could produce an average yield of cane per acre. Johnson grass was getting worse every year. Then I tried planting solid beans, but could not get the beans turned under before the Johnson grass seeded. I was just about as bad off with this practice as with the previous one.

Next, I stopped bean planting and fallowed all of my idle land, plowing some of it as much as ten times during the season, which is quite an expensive practice, and it worked fairly well with my plant cane crop. The following year the fine crop of seed that I raised from the few stalks of Johnson grass seemed to flourish, and I was back in the same predicament.

Realizing that with the short labor supply and high prices, and cheap sugar cane, something else had to be done to offset mounting production costs, I determined to try sheep. In the latter part of May, last year, I put 150 head of sheep in a 50 acre field of first year stubble that was heavily infested with Johnson grass. This field of cane had not been hoed a single time. In a few days, I noticed that the sheep had cleaned up every weed that they could find, and there were quite a number of weeds in this field. After a few more days, I noticed that they were grazing on the small Johnson grass stools; and, as time went by and the smaller stalks were being eaten away, then they began on the larger stalks. A lot of this was growing out of the top of the cane. As the days went by, the Johnson grass was steadily diminishing. Not only was the sugar cane getting a fine cleaning, but the headlands and ditches were being taken care of too. This item alone is quite an expensive one on every sugar cane farm in Louisiana.

On the 15th. of September, I moved 100 sheep out of this field as the grass was getting short and I wanted the sheep to stay in good condition. I observed the field regularly and the 50 head that I left were able to keep the gross down to a minimum. When I started harvesting this field on the 20th. of October, I don't think I would be exaggerating if I tell you that this was the cleanest cane field that I have ever seen. I was also amazed as I observed this experiment to see that the hungry sheep did not eat any of the sugar cane.

I was so pleased over the results of my effort that I scouted the country for enough wire to fence in a 600 acre plot, which was ready for use in July. Then I tried to find enough sheep to put in this field. I was finally successful in purchasing 250 head at this late date. Of course, the results in this field were nothing like they were in the 50 acre field, but I was more than pleased.

I think I gained some very valuable information from my experiment and will be glad to pass it on to any one who might be interested in controlling this Enemy No. 1 of sugar cane. I believe that with good management—fallowing all heavily infested land one to two years, not letting a single stalk of Johnson grass seed itself, grazing the sugar cane fields with sheep to hold the Johnson grass down to a minimum—effective control is assured.

I do not know how early sheep can be put in the fields. I plan to put a few in my fields the first of March.

If they do not nibble the young cane, I will steadily increase the number so as to have them on the job as soon as the Johnson grass starts coming up.

Hoping that the limited information that I have been able to give will be of some value to you and the Sugar Cane Industry, I am

Respectfully yours,
(Sgd.) Edwin Pearce

———o———

University Station
Baton Rouge, La.
January 21, 1949

Dear Mr. Farwell:

I am sorry that I have been unable to get to you the information you requested on using sheep in the control of Johnson grass. I hope that this will reach you in time to meet your deadline. In brief, the following is our ideas on the use of livestock in connection with sugar cane farming.

We who are in the livestock work in the Extension Department feel that beef cattle and sheep both definitely have a place in the rotation for the sugar cane farm. Lands that are heavily infested with Johnson grass can be planted to permanent pastures and grazed with beef cattle which will make a profit for the plantation owners as well as giving complete control of the Johnson grass in that pasture at the end of three years. This land could also be grazed with sheep at the same time that the cattle are grazing on it. The land could then be broken to plant cane, and then sheep could be grazed in the cane to control the seedling Johnson grass plants that would be introduced to the field by natural and artificial means such as birds, mechanical equipment, plant cane, etc. The use of cattle in the control of Johnson grass would also increase the yield of cane produced on the land following the grazing period. To illustrate the results that can be secured, the following is a quotation from the 1948 annual report of Mr. A. E. Camus, County Agent, West Baton Rouge Parish.

"One hundred and forty acres of plant cane where one sheep to the acre did a perfect job in eradicating the Johnson grass seedlings.

The above field history:

1942-1943 — 9 tons to acre — 100% Johnson grass infestation fenced, cattle grazed to 1946 on seeded white clover pasture — very good profits from cattle and hay.

Planted to cane in 1947 — Because this acreage was already fenced for cattle it only cost $4.20 per acre to make it sheep proof with hog wire.

One farmer at the result demonstration said that it cost him $10.00 per acre with hoes and still his cane had Johnson grass and his cane was only half as good as the demonstration field.

Crop now being harvested is producing 32 tons per acre."

It is thought that every farmer would make the most profit out of sheep if he were to maintain a flock throughout the year to aid in the control of Johnson grass and as an additional source of income from the sale of wool and lambs. We think that under fair management of a flock of sheep they will average netting the cane grower approximately $5.00 per head in addition to the control of Johnson grass. In a few cases it may be desirable to buy sheep in the spring, graze them on the cane fields and sell them in the fall, but this would be the expensive way of handling sheep since they are higher in price in the spring and are cheap in the fall, as most of the sheep on the western ranges are sold during the fall and early winter.

For those who are going into the use of sheep in cane, it would probably be most desirable to buy western yearling ewes during the spring, graze them on their cane during the spring and summer, and breed them to the rams on August 1 so that the lambs will begin coming January 1, which is immediately following the average cane harvest. Under this program it would be necessary to have some winter pasture shelter and to furnish some grain and hay during the winter months. The

**Plant Cane Ditch Bank—No Sheep**

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maintaining of a breed flock on the farm will take more attention, but will return a nice profit for the effort that is given.

Where sufficient grazing, other than cane, is available in the field along the ditch bank, turn rows, sheep will not eat cane; however, if the grazing is insufficient to satisfy their needs they can be starved to the point where they will eat suckers and young tender plants. This was illustrated very clearly in Ascension Parish last fall when 4½ acres of plant cane was fenced and 9 head of sheep were placed in the field. This field of cane had been planted on land that was fallow plowed, but when the cane came up it had a heavy infestation of seedling Johnson grass. Both the grass and the cane varied in height from the surface of the ground to possibly 5 or 6". The sheep consumed first the tender Johnson grass seedlings in the cane rows, then the grass along the ditch bank and turn row, which required approximately 10 days before the grass was cleaned out after which the sheep went for approximately 4 days without any grazing to amount to anything before they were sufficiently hungry enough to eat young cane plants.

There are at present 5 sugar cane plantations which have started assembling rather large groups of sheep for grazing in their sugar cane in 1949. Two of these farms have 350 head each, two have 150 each, and one has 200 head. At the present there are 8 additional places which will definitely have rather large numbers of sheep in their cane during the year.

The greatest problem the cane grower will probably have will be the control of predatory animals principally dogs. They can be handled through having all dogs on the plantation and adjacent area confined, construction of dog proof fences and possibly as a last resort enclosing the sheep in a small dog proof enclosure each night.

All the above information is based on observation made by County Agents and cane growers in three parishes, and myself and my knowledge of sheep. To my knowledge there is at present no research experimental data available in Louisiana or other cane sections, and none at present is being conducted nor is any being contemplated at the present time. It is thought that some research data on this project is needed at this time.

It is hoped that this will give you the information that you desire and if it is not in the exact form that you would like to have it, I wish that you would change it, so that it will meet your needs. I am planning on completing a circular outlining the most important parts of mangement in the handling of sheep in sugar cane for the control of Johnson grass.

Yours truly, C. L. HILL
Extension Animal Husbandman

**TABLE 2. Effect of preemergence applications of 2,4-D and flaming on Johnson grass seedlings in fall of 1948 in plant cane in fallow plowed land (sides cultivated before final counts made.)**

| Treatment and rate per acre[1] | No. of plants per foot of drill | | Control with 2,4-D | Control of plants left with flaming | Total control | Acres treated |
|---|---|---|---|---|---|---|
| | Before flaming | After flaming | | | | |
| **Cinclare** (Seedlings 3-5" tall at flaming) | | | | | | |
| 2,4-D (2 lbs.)[2] | 1 ea. 2.9 ft. | 1 ea. 43.2 ft. | 55% | 93% | 97% | 20.67 |
| No spray | 1 ea. 3/4 ft. | 1 ea. 2.5 ft. | | 48% | 48% | 4.00 |
| **Westover** (Seedlings 4-6" tall at flaming) | | | | | | |
| 2,4-D (2 lbs.) | 1 ea. 11.5 ft. | 1 ea. 33.8 ft. | 73% | 66% | 91% | 9.77 |
| No spray | 1 ea. 1.0 ft. | 1 ea. 27.0 ft. | | 88% | 88% | 2.02 |
| **Evergreen** (Seedlings 5-8" tall at flaming) | | | | | | |
| 2, 4-D (2 lbs.) | 1 ea. 4.2 ft. | 1 ea. 8.3 ft.[3] | 95% | 50% | 97% | 3.40 |
| No spray | 1 ea. 1/4 ft. | 1 ea. 1/3 ft. | ---- | 37% | 37% | 1.40 |

[1] Cinclare planted 8/26/48 sprayed **8/30-31/48** flamed **9/28-29/48**, Westover planted 8/25-26/48 sprayed **8/27-28/48** flamed **9/30/48**, Evergreen planted 8/30/48 sprayed **9/3/48** flamed **9/28/48**.

[2] The 2,4-D rate of 2 lbs. is acid equivalent for a blanket spray. Where 2' drill spray is used, this is 2/3 lbs. acid equivalent to acre.

[3] Approximately half of these were from rhizomes not killed in fallow plowing.

## 2,4-D

(Continued from Page 129)

plied. These tests covered approximately 34 acres and the 2,4-D was applied with a 3-row power sprayer. A 3-row butane flamer was used at Cinclare, a Woolery ditch bank burner at Westover, and a 1-row flamer with oil as fuel at Evergreen. It may be seen that 2,4-D alone gave 55 to 95 per cent control, and the number of plants per foot of drill varied from one every 2.9 ft. to one every 11.5 ft. Counts made after flaming showed control of 91 to 97 per cent, the number of plants in the drill varying from one every 8.3 ft. to one every 43.2 ft. The cane stands were unhurt after the treatments.

A method by which 2,4-D could be used as a post emergence treatment would be desirable. Table 3 gives results of a test made at McCall plantation in the fall of 1948. The chemical was applied with a 3-row power sprayer and a 3-row flamer was used. 2,4-D followed by flaming 1 week later gave very good results. The infestation was reduced from one plant each 2/3 ft. of drill to one plant each 45 ft. of drill. Flaming alone was of little value. Stands of cane were uninjured in the test.

**TABLE 3. Results of post-emergence control of Johnson grass seedlings by 2,4-D and flaming at McCall Plantation in plant cane in fallow plowed land in the fall of 1948 (sides cultivated before final counts made).**

| Treatment (cane planted 9/1/48) | Number of plants per foot of drill | |
|---|---|---|
| | 2 lbs. 2,4-D[1] acre | 6 lbs. 2,4-D[2] acre |
| Sprayed 3 wks. after planting[2] flamed 1 wk. after spraying (4 wks. after planting) | 1 plant ea. 45 ft. | 1 plant ea. 45.0 ft. |
| flamed 2 wks. after spraying (5 weeks after planting) | 1 plant ea. 3.7 ft. | 1 plant ea. 15.0 ft. |
| flamed alone (4 wks. after planting) | 1 plant ea. 2.5 ft. | 1 plant ea. 5.0 ft. |
| flamed alone (5 wks. after planting) | 1 plant ea. 1.8 ft. | ---- |
| No spray, no flaming | 1 plant ea. 0.7 ft. | 1 plant ea. 1.8 ft. |

[1] Rate in lbs. per acre acid equivalent of 2,4-D for blanket spray. 2' drill spray would require 1/3 of above amount of 2,4-D.

[2] Johnson grass seedling 3-5" high at time 2,4-D applied.

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## RECOMMENDATIONS

(Continued from Page 128)

"missed" should be so small as to make it economically feasible to have them rogued or pulled-out by hand.

The late April application, depending on rainfall, etc. should protect against seedlings until lay-by time. Then the rows should be dirted-up and an immediate blanket spray of 2 pounds be applied.

It is of utmost importance that the spraying take place IMMEDIATELY after a new surface of dirt has been exposed by cultivating equipment. And though seedlings appear, the surface should not be disturbed. To test the effectiveness of the spray on seedlings two, three, and more weeks after spraying, pull a few and note the lack of root development and the abnormality of what root system is present.

This spring large scale tests are to be made using 2,4-D on stubble. It is expected that the chemical will be effective where Johnson grass has not been allowed to make a root system since the land was fallow plowed. 2,4-D is effective against Johnson grass seeds and seedlings, but is not effective where the growth is from root eyes or Rhizomes.

Note the effectiveness of 2,4-D—controlling annuals. One summertime application will kill willows. Great care should be exercised in spraying 2,4-D. It should not be used near gardens, cotton, sweet potatoes or other broadleafed plants. In certain stages, corn is quite tolerant. As you will note in Dr. George Arceneaux's letter, published in the December 1st. 1948 *Sugar Bulletin*, proper surface applications of 2,4-D do not harm sugarcane. (See note).

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It is hoped that many extensive tests will be made with the use of sheep to control Johnson grass. It is possible that 2,4-D may be used effectively in the early spring to hold-down the growth of Johnson grass until the cane is large enough for it to be safe to introduce sheep to the area. There are many problems to be solved, such as proper fencing, diseases, dogs, etc., but these can be solved. Phenothiazine is the answer to internal parasites in sheep. At the present time there appears to be two basic approaches to the use of sheep to control Johnson grass on cane farms:

Should the sheep be bought (at probably a high price) used to control Johnson grass in the spring and summer, and then be sold (at probably a low price) in the fall?

OR

Should the sheep be kept all year as an aid to Johnson grass control and as a part of diversified farming?

In either case, will it be best to use top grade or scrub sheep?

Your Committee hopes that each farmer who has a Johnson grass control project, whether it be with fallow plowing, smother crops, chemicals, sheep, combinations of these, or some other means, will keep in close touch with his County Agent so that information and experiences can be made available quickly to the Industry. It is only through such cooperation that we can master the Johnson grass problem.

(Editor's Note) In a "normal" growing season in 1948, with heavy rains in the fall of 1947, Smithfield Plantation, West Baton Rouge Parish, in the first large scale use of 2,4-D in Louisiana to control Johnson grass seedlings, showed the following: Land fallow plowed in 1947, planted in September and blanket sprayed. Drill sprayed in spring and blanket sprayed at lay-by. Started harvesting October 27th., 1948, finishing January 7, 1949.

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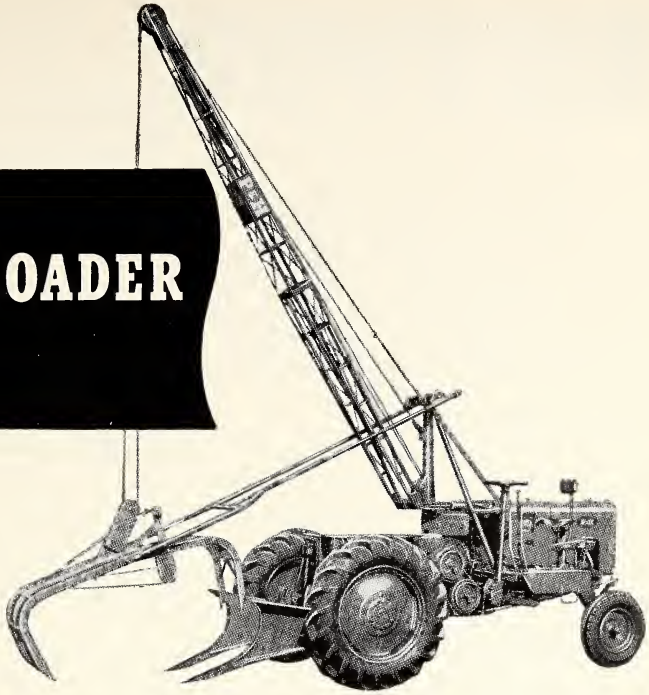

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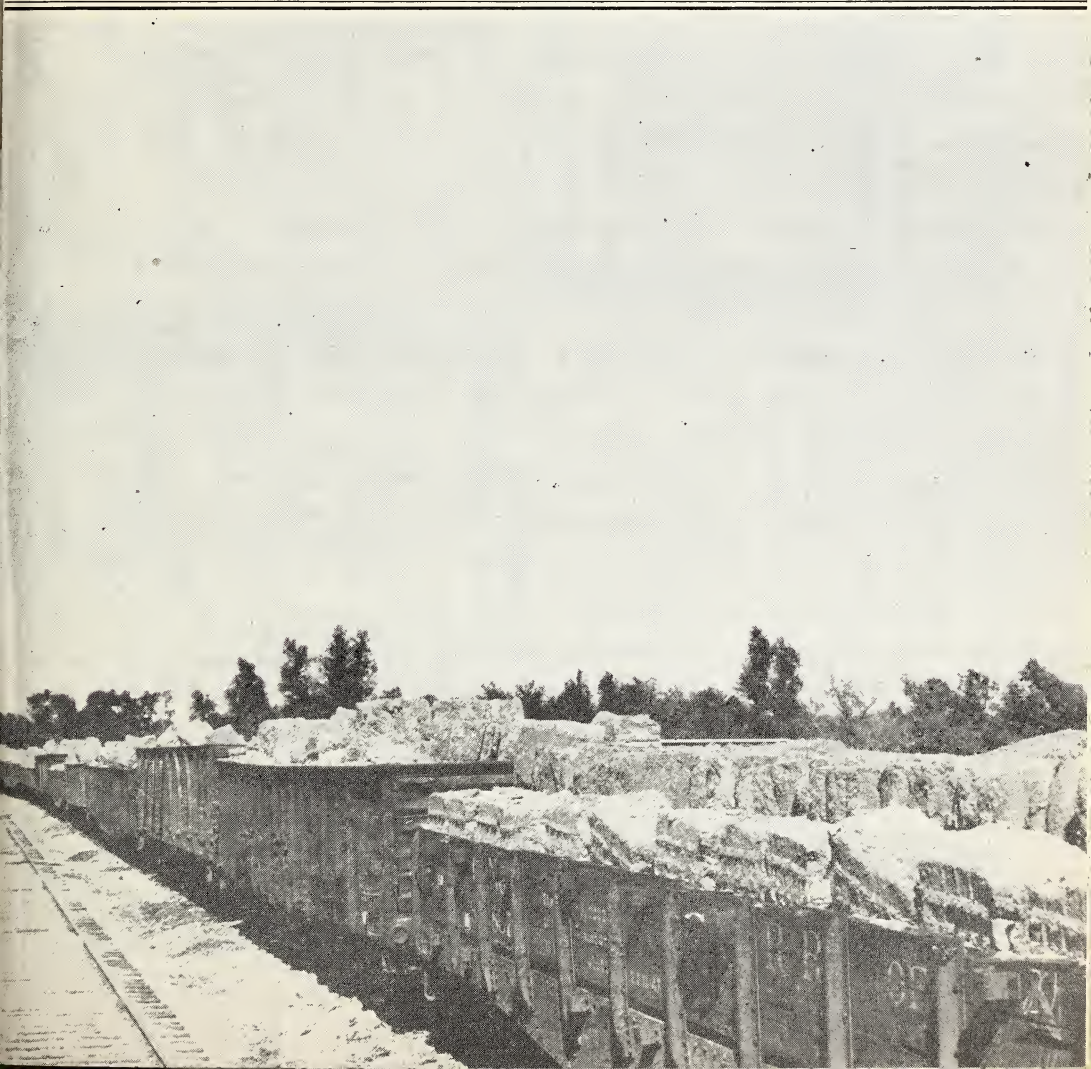

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Walter Godchaux, Jr., New Orleans, La.
F. A. Graugnard, Jr., St. James, La.
J. L. V. Grenier, Thibodaux, La.
E. N. Kearny, New Orleans, La.
Leon J. Landry, New Iberia, La.
H. Langdon Laws, Cinclare, La.
Stephen C. Munson, Jeanerette, La.
George M. Murrell, Bayou Goula, La.
Charles O'Brien, Bunkie, La.
David W. Pipes, Jr., Houma, La.
Ed Schexnayder, Bayou Goula, La.
Dubourg Thibaut, Donaldsonville, La.
Spencer G. Todd, Franklin, La.
G. G. Trowbridge, Jr., Franklin, La.
Louis Wilbert, Plaquemine, La.

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**Cover Pictures by Metcalf Studio, 504 Willow Street, Franklin, La. For copies and enlargements write the studio.**

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# STATEMENT OF DR. EFFERSON ON PROPOSED MINIMUM WAGE RATES

*Statement by Dr. J. Norman Efferson, Economist for the Louisiana Agricultural Experiment Station, Baton Rouge, Louisiana, Before the House Committee on Education and Labor With Regard to Mr. Lesinki's Bill on Minimum Wages, February 3, 1949.*

The purpose of this report is to present for the review and study of the members of this Committee, an analysis of the changes in costs and returns in manufacturing raw sugar from sugarcane in Louisiana to be expected under each of the commonly proposed changes in the Fair Labor Standards Act.

Detailed studies of the costs and returns from the operation of raw sugar mills in Louisiana have been conducted by the Louisiana Agricultural Experiment Station each year since 1937. My responsibility has been to conduct these studies since that time.

Throughout this 12-year period, from 25 to 50 mills were contacted each year, and detailed audits were made of all records for the purpose of compiling average costs and returns for the industry as a whole. The sample of mills studied throughout this period represents about three-fourths of the total volume of production of raw sugar in the State. Detailed results of these studies have been published by the Louisiana Agricultural Experiment Station for each year from 1937 through 1947. Five sample copies of these publications are available now and others can be supplied to all members of the Committee, if desired.

Since the presently existent 40c minimum wage, with exemptions from the payment of premium wages over a 40-hour work-week, have been in effect since late in 1942, the significant data bearing on the subject of the effect of certain adjustments in wage rates apply to the results from 1943 to date. Because of the fact that the costs and returns from the production of raw sugar in Louisiana vary greatly from year to year, due to differences in climatic conditions and price levels, the results of any one year are likely to be misleading, if not observed in connection with results for a longer period of time. Therefore, the five-year average, 1943-1947, has been used in this analysis of the probable effect of certain adjustments in wage rates on costs and returns. Results for the 1948 season are not available yet. But preliminary indications point to an unprofitable season; thus the 1943-1947 average presents a more favorable picture than for 1948.

For the five-year period, 1943 through 1947, total costs of production of raw sugar averaged about $650,000 per mill, per year; $7.50 per ton of cane; or $4.80 per hundred pounds of sugar manufactured. Net income, after all costs, averaged about $20,000 per mill, per year; 24c per ton of cane; or 15c per hundred pounds of sugar manufactured. In view of the fact that the average capital investments per mill amounted to around $500,000 for this purpose the average net income amounts to 4 per cent on the investment.

These average returns are relatively low in comparison with returns from many other types of manufacturing industries for the same period of time. During this recent period, the industry operated under a 40c minimum wage. Of the average labor cost in producing raw sugar in these mills, about one-half was paid to workers at the 40c rate and about three-fourths was paid at less than 75c per hour. Stated in terms of the total cost per mill, the total labor expense averaged about $100,000 per mill, per year, of which $45,000 was paid at the 40c rate and about $75,000 was paid at less than 75c per hour. In terms of labor payments for the different items of cost, about 75 per cent of the total labor expense was paid for services during the grinding season for

(Continued on page 151)

# IN WASHINGTON WITH C. J. BOURG

## Parity Situation

Some consideration is being given to certain proposals to supplement the price provisions of the Sugar Act of 1948 in order to assure the grower of sugar crops a more continuous and stable income on a favorable level. One of the proposals for accomplishing this is to draw upon the price support provisions of the Agricultural Act of 1948.

Among the proposals for price support which have been considered are:

(1) the formula established in the Sugar Act for wholesale refined sugar which was referred to by Congressman Hope when he sponsored the bill on the floor of the House as a "sort of parity for sugar"; and

(2) parity prices for sugarcane and sugar beets established in accordance with the formula for establishing parity for agricultural products under the Agricultural Act of 1948.

## Sugar Parity

The so-called parity for sugar established under Section 201 of the Sugar Act is based upon the relationship of sugar prices to the cost of living, which prevailed during the first ten months of 1947. During this period, the price of sugar averaged 8.267 cents a pound and the cost of living averaged 157.8 per cent of the 1935-39 level. During November 1948, the latest month for which information is available, the cost of living in the United States averaged 172.2 per cent of the 1935-39 average, indicating a so-called parity for sugar of 9.02 cents a pound. This compares with the present wholesale refined cane sugar price of 8.0 cents a pound.

Under the present price support program, prices of agricultural commodities are being supported at 90 per cent of parity. On this basis the support price for sugar would be 8.12 cents a pound, or only .12 cent (12/100th of a cent) a pound more than the present wholesale refined price. It would be considerably below the 8.40-cent figure mentioned by the Secretary of Agriculture on December 23rd in announcing the 1949 sugar consumption requirement determination.

This idea of price support seems to have the further hazard in that, after 1949, a flexible price support system goes into effect under which prices may be supported at from 60 to 90 per cent of parity. While it is generally anticipated that the lower limit of this range may be lifted, it still would be indicated that at anything below 90 per cent of parity, the sugar industry would not be as well off as it now is.

## Sugarcane and Sugar Beet Parity

Although a new parity formula was enacted in the Agricultural Act of 1948, this formula does not go into effect until 1950. Consequently, for the present time any price support for sugarcane and sugar beets would be based upon by the old parity formula. On the basis of the most recent index of prices paid by farmers (December 15, 1948), the parity price for sugarcane is $9.21 per ton and for sugar beets is $13.58 per ton. The indicated support prices, if such could be obtained for sugarcane and sugar beets (which are neither basic nor Steagall commodities) would be $8.29 and $12.22, respectively. On the

basis of current sugar prices, sugarcane and sugar beet prices, including Government payments are indicated at levels above the 90 per cent of parity figure. A considerable lowering of sugarcane and sugar beet prices would be indicated in future price support programs, based on a range of only 60 to 90 per cent of parity.

On the basis of the new formula for computing parity which becomes effective in 1950, it is understood that the parity price for sugarcane will be reduced, and that for sugar beets little, if any, increased. Thus the growers of sugar crops would stand to gain nothing from a sugar price support program in the years ahead, particularly if the Sugar Act is administered as indicated in the Secretary's release of December 23rd on sugar price objectives.

Unofficial figures of the Bureau of Agricultural Economics indicate that as of June 15, 1948, the parity price for sugarcane, figured on the old basis of computing parity, was $9.36 a ton. The parity price for cane, figured on the new basis of parity, however, becomes only $6.85 per ton. The parity price for sugar beets, figured on the old basis, was $13.80 per ton. Figured on the new basis, the parity price becomes only $12.10 per ton. Thus, the revised formula for computing parity, as incorporated in the Agricultural Act of 1948, results in a lowering of the base price to growers by some $2.50 per ton of cane and $1.70 per ton of sugar beets.

Under the new formula the parity price for sugarcane and sugar beets for June 1948 would have been computed as follows:

| Season's Average Prices 1938-47 | | Index of all farm products for same years 1938-47 | | 1938-1947 prices adjusted to 1910-14 | | Index of prices paid by farmers with interest and taxes June 15, 1948 | | Adjusted on basis of modernized parity, including interest and taxes June 15, 1948 | Parity under present basis of figuring June 15, 1948 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Sugarcane | | | | | |
| 4.59 | ÷ | 168 | = | $2.73 | × | 251 | = | 6.85 | $9.36 |
| | | | | Sugar Beets | | | | | |
| 8.08 | ÷ | 168 | = | $4.81 | × | 251 | = | 12.10 | $13.80 |

We are reproducing below a story carried in the Journal of Commerce. Here is an interesting angle which might involve us if we sought to put sugar in the Agricultural Act as a basic commodity and depend upon parity for price.

*Farm Bureau asks flexible support — Votes down proposal for switch to rigid crop price props*

**Washington, January 26th.** The American Farm Bureau Federation today flatly reaffirmed its position favoring flexible price supports for basic crops as outlined in the Aiken bill passed at the last session of Congress. The key farm organization overwhelmingly voted down a series of resolutions calling for a switch to a system guaranteeing 90 per cent of parity price support on basic crops when acreage allotments on marketing quotas are in effect. These were voted down by about a 2-to-1 majority.

In his official statement, Federation President Allan B. Kline declared that "the issue under consideration has not been a matter of flexible versus rigid price supports," but rather has centered around the question of "how best to gear in each community under the flexible price support schedule of the act."

The fight for 90 per cent price support on basic commodities when controls are in effect came, as expected, from board members of cotton states, backed by Kansas and Arizona representatives. They expect to carry the fight into Congress and the Southern Congressional delegation apparently is

(Continued on page 149)

# YOUR COUNTY AGENT REPORTS

## The 1948 Sugarcane Harvest in West Baton Rouge Parish

*A. E. Camus, County Agent*
*West Baton Rouge Parish*

The 1948 sugarcane harvest in West Baton Rouge Parish came to a close on January 6, 1949.

The mills of the parish ground 355,000 tons of cane, this was about 118,000 more than in 1947. Of the total milled, approximately 65% was produced in the parish. The parish yield was the best since 1938, even though the stubble was about 50% of normal. The plant cane yield for the parish was 32 tons per acre and the average yield for the parish of both stubble and plant was about 22½ tons per acre.

Every method and means have been used to help the growers increase their yield and stay in the sugar business. Each year a yield table is compiled by the County Agent in cooperation with the growers and the Production and Marketing Administration. This table gives a complete picture of acreage, tons of cane produced, and pounds of sugar produced on each farm in the parish. The goal set in this table report was 4,000 pounds of sugar per acre or better and the growers were asked to compare their yields with their neighbors. A list of essential practices that is necessary to increase yields was listed in the report as follows

1. Better drainage
2. Johnson Grass control, by all means and methods
3. Planting of sufficient summer and winter legumes
4. Plant best varieties properly and use healthiest cane
5. Turtle back plots, breaking up thoroughly of the seed beds
6. Cultivate thoroughly early in the season
7. Plant only acreage that you have sufficient equipment to handle
8. Lay by as early in June as possible.
9. Pay close attention to utilization of equipment, keep it in good shape, teach operators to use it to get maximum results.

Every grower knows the above facts, but it is amazing how many neglect or half way carry out the above practices.

The year of 1947 was one of the parish's worst years since 1926 because of the extreme drought but there were about 25 or 30 farmers that produced from 3,500 to 5,900 pounds of sugar per acre. The reason for their good yields in this bad year was because these farmers had paid strict attention and carried out every practice above over a period of years and their soil was in top physical and mechanical condition.

It is gratifying to know that in 1948 we will come near averaging our 4,000 pounds of sugar per acre goal and most of our farmers will exceed it.

We are fortunate to have a variety outfield station at Cinclare Central Factory and an increase field at Smithfield Plantation. Our growers are urged to visit these plots and observe the performance of these varieties under actual field conditions.

At our Annual Sugarcane Field Day we call on the Experiment Station personnel and the Extension Service to give us their information on best practices.

This year for the first time there was a meeting called of plantation owners, field managers, and overseers. A discussion on the function of each in order to get the maximum yields and profits out of sugar production was led by the Agent.

Two weaknesses of many growers are called to their attention by the Agent at every meeting. 1st. Many growers expect new sugarcane varieties to take care of and overcome poor farming practices. 2nd. Most sugarcane growers suffer with an acreage complex. In reference to the first statement, the variety 29-320 was slated for discard in 1937,

(Continued on page 151)

# A STATEMENT RELATIVE TO THE RECIPROCAL TRADE AGREEMENT ACT

*The following letter was written by Mr. Bourg on February 2nd to The Honorable Robert L. Doughton, who is the Chairman of the Ways & Means Committee of the U. S. House of Representatives. The letter is self-explanatory.*

February 2, 1949

The Honorable Robert L. Doughton
Chairman, Ways and Means Committee
U. S. House of Representatives
Washington 25, D. C.

Dear Sir:

This statement relates to sugar under the Reciprocal Trade Agreement Act, the extension of which is proposed in H.R. 1211, now before the Ways and Means Committee. It is submitted on behalf of the:

*American Sugar Cane League, Association of Sugar Producers of Puerto Rico, Farmers' and Manufacturers' Beet Sugar Association, Florida Sugar Producers, Hawaiian Sugar Planters' Association, United States Beet Sugar Association.*

There have been five successive reductions in the rates of duty on sugar as enacted in the Tariff Act of 1930. The rates now in effect on Cuban sugar are only 25 per cent of the 1930 rates. The rates of duty on sugar imported from countries other than Cuba and the Philippine Republic are only 27.5 per cent of the 1930 rates. These low rates of duty are completely inadequate for the protection of the domestic sugar industry.

The tariff concessions on sugar under the Reciprocal Trade Agreement Act have always prevailed against the background of sugar quota legislation. As a result of the quantitative limitation on the importation of sugar from foreign countries and the distribution of domestically-produced sugar, it has been posible to lower the tariff on sugar progressively to a relatively nominal figure and still afford to the domestic sugar industry, by the Sugar Acts, the protection which Congress intended it to have against foreign producers with low wage standards and other conditions of operation not compatible with American standards. Earlier tariff concessions on sugar were contingent upon the effective existence of Sugar Act quota limitations, but this provision was omitted in later sugar trade agreements. The result of the Sugar Act limitations and the concessions in the tariff on foreign sugar have been a tremendous gain to the foreign producer of sugar sold in the United States market without material damage to the domestic producer.

The Sugar Act of 1948, which was enacted for a period of five years, expires at the end of 1952, and the domestic industry is assured of this protective limitation for only four more crop years.

The domestic sugar producing areas have accepted and fully supported the limitations and protections of the Sugar Act. Therefore, their interest in the tariff on sugar, so long as the Sugar Act or similar legislation remains in effect, has become relatively nominal. However, should the Sugar Act become inoperative, it is our position that the tariff should be restored at least to the statutory rate.

This is not the proper forum, we recognize, for the discussion of the relative merits of the Sugar Act or similar legislation. However, the domestic sugar industry cannot be maintained, in view of the low level to which sugar tariffs have been reduced under trade agreement concessions, without Sugar Act quotas or similar legislation.

Very truly yours,

CLARENCE J. BOURG

# JOHNSON GRASS CONTROL

Jan. 18, 1949

Mr. F. Evans Farwell
1002 Whitney Bank Bldg.
New Orleans, La.

Dear Mr. Farwell:

Enclosed are data which may be of interest to you and the Johnson grass committee. The results are from three cuts of plant cane in fallow plowed land in which Johnson grass was kept to a minimum by hand roguing. The checks were cuts next to the treated. The results are rather interesting in that they indicate a loss in plant cane yields which would more than pay for a chemical control program. The sugar yields are calculated with the mill factor included for St. Delphine and McCall. I am not sure about LaPlace.

Sincerely,

(Sgd.) S. J. P. CHILTON,
Plant Pathologist

**Effect of removing Johnson grass from sugar cane in plant cane in fallow plowed lands. (All hand rogued)**

| Location | Plot | Acreage | Tons per Acre | Sugar per ton (lbs.) | 96° Sugar per Acre |
|---|---|---|---|---|---|
| La Place[1] | Treated | 1.30 | 39.15 | 163.1 | 6385 |
| | Check | 2.70 | 35.50 | 164.1 | 5825 |
| Difference | | | + 3.65 | — 1.0 | + 560 |
| St. Delphine[2] | Treated | 3.62 | 27.99 | 154.4 | 4322 |
| | Check | 8.59 | 25.20 | 154.1 | 3883 |
| Difference | | | + 2.79 | + .3 | + 439 |
| McCall[3] | Treated | 2.46 | 29.12 | 152.4 | 4438 |
| | Check | 2.46 | 28.66 | 150.0 | 4299 |
| Difference | | | + .46 | + 2.4 | + 139 |
| Av. 3 tests | Treated | 7.38 | 32.09 | 156.6 | 5025 |
| | Check | 13.75 | 29.79 | 156.0 | 4647 |
| Difference | | | + 2.30 | + 0.6 | + 378 |

[1] Seven rows with ATA, remainder, 2,4-D 2 lb. acre acid equivalent.
[2] 2.3 Lbs. 2,4-D acid equivalent acre at lay by.
[3] Forty pounds acre rate of ATA.
Varieties—C. P. 36/105 at LaPlace, C. P. 29/320 a St. Delphine, and C. P. 34/120 at McCall.t


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# IN WASHINGTON

(Continued from page 146)

prepared for a full scale scrap in favor of the higher price supports for cotton, tobacco and peanuts.

Mr. Kline pointed out that the present sliding scale price support legislation which goes into effect next January 1st and provides 60 to 90 per cent of parity price support when no marketing controls are operating, and 72 to 90 per cent of parity when such controls are in effect—had "practically unanimous support by the State farm bureaus" and was backed by both parties in Congress.

In addition, he pointed out that both major parties endorsed flexible price support in their platforms and that since Congress convened, President Truman's Council of Economic Advisers has "called attention to the weakness of supports at too high levels and endorsed the flexible price support provisions of the present law".

Mr. Kline commented that the board seemed to consider the Aiken legislation a good law worthy of thorough trial before any significant changes are made. There will be plenty of opportunities to press for changes in the law if and when experience seems to warrant such action," he said.

The Board still has to consider what its position will be on support of non-basic commodities which were covered until December 31st by the Steagall amendment guaranteeing them price support floors 90 per cent of parity. Board members indicated, however, that the major problem considered at this meeting was the basic price support question, and that there is no change in the resolution favoring flexible supports passed by the voting delegates at the Farm Bureau convention last December. At that time, however, the Board was directed to reconsider the question of making 90 per cent of parity price support mandatory for cotton in particular when acreage allotments or marketing quotas were voted by farmers. Today's action constitutes a flat turndown of this request which was sponsored by Southern delegates.

# THE MARKETS

The following summary covering the outlook for sugar in 1949 is taken from the January issue of "The Demand And Price Situation" bulletin of the Bureau of Agricultural Economics of the United States Department of Agriculture.

"Domestic sugar prices should be higher in 1949 than in 1948. The present wholesale price of refined sugar at 8 cents a pound is about one cent below the price objective defined in the Sugar Act.

A drop in world price of sugar, f.o.b. Cuba, is expected in 1949. The contributing factors are the record 1948-49 world crop, the decrease in export markets for Cuban sugar because of the increase in production in important importing countries in Europe, the increasing availability of exports from countries not requiring dollar exchange, and the decrease in the Cuban sugar quota for the United States in 1949. The amount of sugar to be purchased by the United States for foreign feeding programs will be an important factor in determining the size of the Cuban stocks carry-over at the end of 1949.

Domestic sugar prices averaged lower in 1948 than in 1947. The average wholesale price of raw sugar was 5.56 cents per pound compared with an average of 6.22 cents in 1947, a decline of almost 11 percent. The average wholesale price of refined sugar in 1948 was 6 percent lower than in 1947, 7.62 cents as compared to 8.12 cents, while the average retail price was 3 percent lower, 9.4 cents as compared to 9.7 cents.

Deliveries of sugar by primary distributors amounted to 7,341 thousand tons in 1948. Deliveries for the first few months in 1949 will be substantially heavier than in 1948. After remaining steady throughout the second half of 1948 wholesale refined prices advanced from 7.75 to 8.00 cents the first week in January. Before the price advance became effective refiners allowed the trade to make contracts for future delivery if bids were submitted promptly. Bookings were heavy, and contracts are believed generally to have covered requirements for an extended period of time. Besides raising the basic price refiners also announced increased differentials for special packaging."

—o—

The officials quotations of both the Cane Products Trade Association and the Louisiana Sugar & Rice Exchange since the start of the pricing period have been as follows:

Week ending October 14th, 1948: Raws 5.55, Blackstrap, no quotation.

Week ending October 21st, 1948: Raws 5.58, Blackstrap 17.5 cents.

Week ending October 28th, 1948: Raws 5.63, Blackstrap 17.0 cents.

Week ending November 4th, 1948: Raws 5.63, Blackstrap 16.5 cents.

Week ending November 11th, 1948: Raws 5.615, Blackstrap 15 cents.

Week ending November 18th, Raws 5.63, Blackstrap 14 cents.

Week ending November 25th, Raws 5.63, Blackstrap 12½ cents.

Week ending December 2nd, 1948: Raws 5.61, Blackstrap 11.3 cents.

Week ending December 9th, 1948: Raws 5.66, Blackstrap 9.4 cents.

Week ending December 16th, 1948: Raws 5.60, Blackstrap 9.05 cents.

Week ending December 23rd, 1948: Raws 5.55, Blackstrap 9 cents.

Week ending December 30th. Raws 5.60. Blackstrap 9 cents.

Week ending January 6th, 1949. Raws 5.69. Blackstrap 8.85 cents.

Week ending January 13th. Raws 5.65. Blackstrap 8.15 cents.

Week ending January 20th. Raws 5.65. Blackstrap 8 cents.

Week ending January 27th. Raws 5.62. Blackstrap 8 cents.

The sugar pricing period ended with the week of January 27th and the season's average price was 5.618 cents a pound. The Production and Marketing Administration made its official season's average price for raw sugar 5.6184, carrying the division to one more decimal in order to arrive at a price of $5.787 per ton of standard cane.

The pricing period for Blackstrap Molasses will not be completed until Thursday, March 31st. This market has continued its steady decline and the last sale recorded was at the new low of 7 cents a gallon in bulk f.o.b. plantation. Weekly average prices since January 27th have been as follows:

Week ending February 3rd. Blackstrap 7.8 cents.

Week ending February 10th. Blackstrap 7.3 cents.

## YOUR COUNTY AGENT

(Continued from page 147)

it will be noted in this report and yields for the past 10 years it has been one of our best sugar producing varieties on the farms that were properly handled. The second remark, on most farms you will find from 25 to 50% of the acreage heavily infested with Johnson Grass and poorly cultivated, the result is low yield and this takes the profit from some good producing acreage the grower may have.

Each year our cattle are taking a more important place in the sugarcane rotation. By the use of cattle the soil is rested; white clover and the cattle build up the soil and add additional source of revenue.

## DR. EFFERSON

(Continued from page 144)

the procurement of sugarcane, manufacture of sugar, marketing, and overhead maintenance, while 25 per cent was off-season labor cost.

In view of the fact that overtime exemptions under the Fair Labor Standards Act now prevail during the grinding season for these mills, these facts indicate that about three-fourths of the total labor expenses would be affected by any changes in the minimum wage or the exemptions.

With the detailed data that is available concerning the actual wages paid and the returns per mill, it is possible to compute that average earnings are likely to be, if the proposed changes are made in the Fair Labor Standards Act. The first of these major changes now under discussion is an increase in the minimum wage from 40c to some higher level. If the minimum wage in the Louisiana sugarcane industry is increased from 40c to 60c, the total labor costs will be increased from $100,000 per mill, per year, to $135,000, or a net increase of about $35,000 per mill, per year, based on the 1943-47 experience.

If the minimum wage is increased from 40c to 75c, the labor costs will be increased from an average of $100,000 per mill, per year, to about $150,000, or an increase of about $50,000 per mill, per year.

Average earnings of these mills in the past five-year period were only $20,000 per year; therefore, an increase in the minimum wage up to 75c an hour indicates that annual earnings in the future will be a minus quantity approximating a loss of $30,000 per mill, per year. This will mean a prospective loss of 6 per cent per year on the investment in comparison with the previous five years earnings of 4 per cent on the investment. These changes would occur with the increase in the minimum wage, but with all of the presently existing exemptions from overtime pay for this seasonal industry still being maintained. If other adjustments are made in the overtime pay exemptions, the losses will be even greater.

In addition to the currently suggested changes in the minimum wage, certain changes in the overtime pay exemptions in the Fair Labor Standards Act have been proposed. The changes suggested have been the elimination of one or both of the Section 7(c) and Section 7(b)(3) exemptions under the Act. The elimination of the Section 7(c) exemption with the retention of the Section 7(b)(3) exemption would require Louisiana raw sugar mill operators to pay overtime wages in excess of 56 hours per work-week during the grinding season, in place of the present situation in which no premium wages are required to be paid.

The elimination of both the Section 7(c) and Section 7(b)(3) exemptions would require Louisiana raw sugar mill operators to pay overtime wages in excess of 40 hours per work-week during the grinding season in place of the

present situation in which no premium wages are required to be paid. The Section 7(c) exemption is a complete exemption from the maximum hours provisions of the Act for the sugar industry, among others. The Section 7 (b)(3) exemption is the exemption provided for industries of a seasonal nature, but limited to 14 weeks.

During the past five years, the usual work-week of the raw sugar mill employee in Louisiana during the grinding season has been 84 hours. Practically all the mills operate two 12-hour shifts, 7 days a week, in the brief 80 to 90 day harvesting season. The efficiency of raw sugar production and the practical problem of processing the crop, when it is mature enough to have a sufficient quantity of sugar, but before adverse weather conditions cause losses, makes it necessary that the mills operate continuously day and night during the harvesting season. Because of these practical physical problems, the raw sugar mills in Louisiana will have to continue to maintain their policy of operating continuously 24 hours a day, every day, during the grinding season, regardless of changes in the overtime pay provisions.

In addition, the shortage of available labor in the region, aggravated by the intense competition by the farmers and millers, has made it impossible to reduce the work-week by adding a third shift. Also, even if common labor were available, three shifts would not be practical because the skilled and semi-skilled labor needed is not available due to the fact that the industry is a brief seasonal one.

As a result of this situation, the only adjustment possible to meet increased labor costs, if overtime pay exemptions are removed, would be to pay the full overtime required.

Since the presently existing overtime pay exemptions do not apply in the off season operations of raw sugar mills in Louisiana, changes in these exemptions would not affect all labor costs, but would affect the labor cost during the grinding season, which is 75 per cent of the total labor cost of the year.

Under the present 40c minimum wage, if the Louisiana raw sugar mill operators were required to pay overtime rates for all hours in excess of 56 per work-week, the overtime pay for the 84-hour week they now work would cause the expense for labor to be increased about $10,000 per mill, per year. If the minimum wage is 75c and overtime pay of time-and-a-half for 28 hours of the 84-hour week were charged, the labor cost would be increased about $16,000 per mill, per year. The range and possible cost under this overtime pay situation varies from a 40c minimum and complete exemptions from overtime pay to a 75c minimum and an overtime pay charged for all work in excess of 40 hours. If the latter were to become the effective standard, the total labor cost per mill would be about double the current expense.

The final effect of these possible changes in labor costs would show up in net earnings as follows:

Current net earnings for the most recent five-year period averaged $20,000 per mill or 4 per cent on their investment. If the 40c minimum is maintained and the processors are required to pay overtime in excess of 56 hours, the return of earnings would have been $10,000 per year or 2 per cent on their investment. If the present 40c minimum were maintained and the processors were required to pay overtime in excess of a 40-hour week, average earnings would be about $4,000 per year or less than 1 per cent on their investment.

If a 75c minimum wage is established and all of the present overtime exemptions are maintained, the average earnings per mill are indicated to be a loss of $35,000 per year. Under a 75c minimum wage, and overtime pay required in excess of 56 hours, the indicated loss per mill, per year, is $50,000, which is a loss of 10 per cent per year on their investment. Under a 75c minimum wage and overtime pay required in excess of 40 hours, the indicated average loss per mill, per year, is about $60,000 or 12 per cent of the investment.

Fixed minimum wages and rigid overtime pay requirements tend to work to the disadvantage of industries using low-quality unskilled labor such as the Louisiana raw sugar industry. A possible result of too high a level of wage rates is the abandonment of industries such as this one and the creation of unemployment rather than the improvement of the position of labor. Because of this fact, differences in the quality of labor and in cost of living in different regions of the country should be considered in establishing minimum wage rates, and the industry advisory committees should be required to consider these variations in making their recommendations.

These facts indicate quite clearly that the Louisiana sugar industry has not been an extremely profitable industry in the last five years and that if it is required to make any substantial adjustments in wage rates along the line of increased minimums or the loss of overtime pay exemptions, substantial losses can be expected in the near future. The only possibility for offsetting these losses would be to establish and maintain the price of sugar under the Sugar Act sufficiently higher than the current price to offset the increased labor costs.

## SUPPLEMENTAL STATEMENT

In addition to the difficulties likely to be experienced by the Louisiana raw sugar industry if the minimum wage is increased and exemptions from overtime pay removed, Section 1-3(c) of H.R. 2033 provides for a change which will seriously affect not only sugarcane farmers but also farmers throughout all parts of the country.

Section 13(c) provides that all far-

(Continued on next page)

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mers who employ as many as 4 hired men will be subject to the provisions of Section 6, which means that they will be required to pay the minimum wage rate of 75 cents an hour. As a result, most of our sugarcane farmers and much of the commercial agricultural production industry throughout the United States will be subject to the minimum wage requirements.

During the 1942-47 period, Louisiana sugarcane farmers earned an average of about 40 cents per hour of labor for all work in their farming operations. In the 1938-42 period, their average return per hour of labor was only 20 cents. For the United States, as a whole, it is doubtful that average returns per hour of labor earned by farmers amounted to as much as 50 cents during the high-priced war period. Agricultural prices are declining now and average earnings-per-hour on farms will be lower in the future than they have been in the past. Thus, if farmers are required to pay a minimum wage of 75 cents, no farmer will be able to employ outside labor; thus, agricultural production will be greatly retarded and serious food shortages will occur throughout the country.

The Section 13(c) provision does provide that small farmers are exempt from the minimum wage provisions, but this will be of little help even to small farmers. If the neighboring commercial farmer who employs 4 or more hired laborers is required to pay a minimum wage of 75 cents an hour, the small farmer who needs extra labor in planting and harvesting will also have to pay the same rate. There is no effective way in a competitive economy whereby workers can be persuaded to work for one individual for 75 cents an hour and accept a lower rate just across the road

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because the smaller farmer employs fewer men.

The net result of Section 13(c) of H.R. 2033 would be to fix the minimum wage for all farm labor at 75 cents an hour. This minimum wage increase would cause labor costs for skilled and semi-skilled jobs in agriculture and agricultural processing establishments to increase along with the increase in common labor costs to 75c; if the minimum wage at the lowest level is increased, corresponding increases will have to be made all along the line.

Farming is not a high-profit occupation and this would cause most farmers to reduce production to the level which could be handled by their own labor, without outside help. This will cause wholesale unemployment throughout the country and would reduce agricultural production to a dangerously low level. It could bring about drastic declines in land prices, reduced demand for farm machinery, automobiles, and industrial goods, and would be the best possible way to bring about a depression as severe, or even more so, than the great depression of the early 1930's.

—o—

January 20, 1949

Mr. F. Evans Farwell, Chairman,
Johnson Grass Control Committee,
American Sugar Cane League,
New Orleans, Louisiana

Dear Mr. Farwell:

Relative to your letter of December 27, 1948, I have prepared the attached table for the benefit of yourself and other sugar cane growers with reference to our experimental work with sheep in Johnson grass control.

I thank you for your letter and I will be happy to pass on any information to any interested parties at all times.

Yours sincerely,

(Sgd.) J. CHAUVIN WILKINSON

| Plantation | Acres | Variety | Average Tonnage | Average Sucrose |
|---|---|---|---|---|
| Poplar Grove | 78 | 34-120 Plant | 35 | 12.20 |
| | 15 | 29-320 Plant | 32 | 12.90 |
| Belmont | 40 | 29-320 Plant | 33.5 | 13.25 |

Dates of Harvest—December 15th-January 1st.


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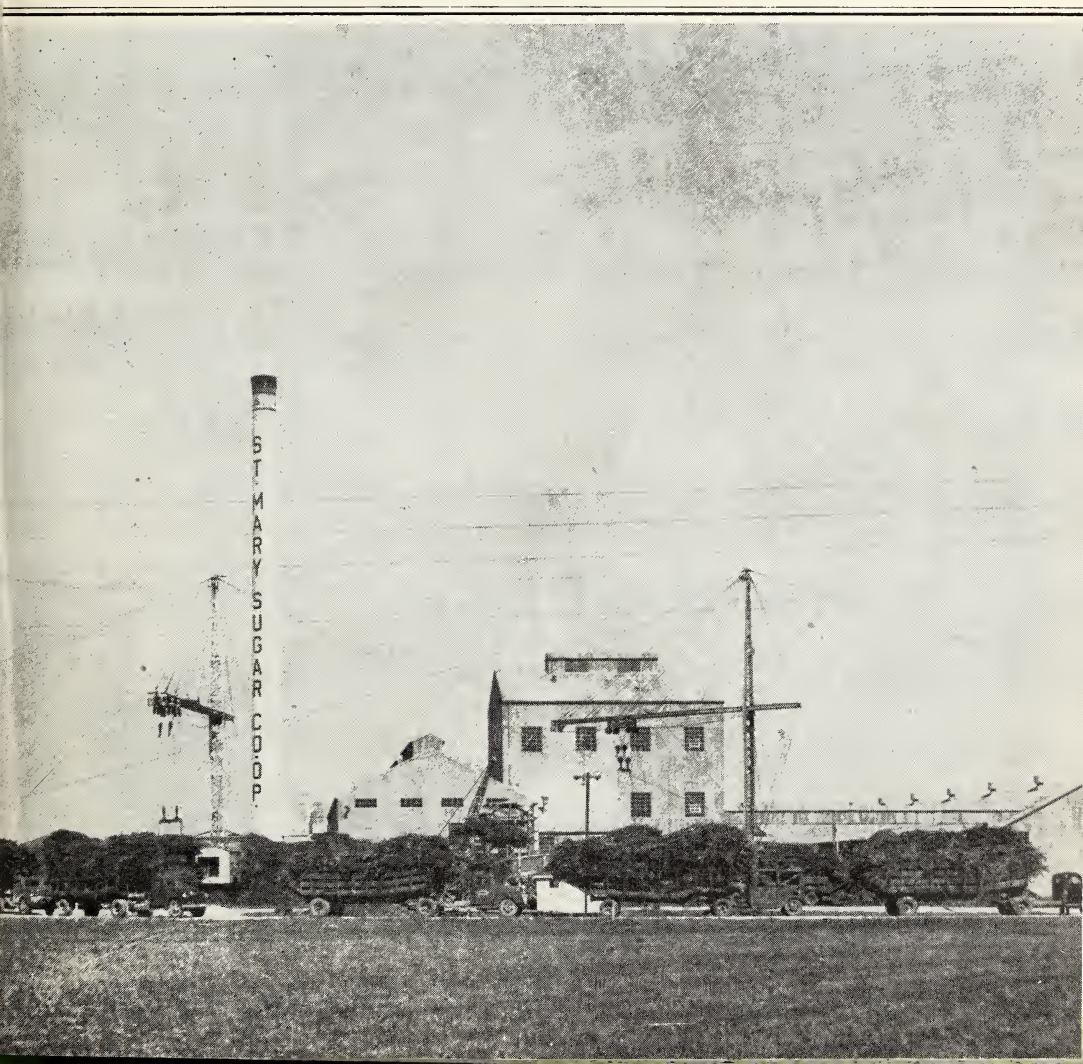

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THE
# SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12

MARCEL J. VOORHIES, Editor

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(*The* 1949 *Sugar Cane Harvest In Avoyelles Parish*)

# INSECTICIDES PROVIDE CROP PROTECTION

Nearly twice as much sugar per acre was produced experimentally by entomologists in Louisiana recently, by killing soil-inhabiting wireworms with insecticides, the U. S. Department of Agriculture recently stated. Soil infested with these insect pests produced only 27 tons of sugar cane, or 4,500 pounds of sugar per acre, while treated soil in which the wireworms were killed produced nearly 47 tons of cane and over 8,000 pounds of sugar per acre.

This is an outstanding example of an insect doing damage far beyond that generally suspected, and it indicates that many of the older loss estimates are much too low.

Using new and more effective insecticides enable entomologists to prove the vast amount of damage certain insects do to growing crops. Who could have guessed that DDT applications would increase potato production by 30 per cent? Or that alfalfa hay production could be doubled by killing the insects that reduce the crop? Or the alfalfa seed production could be increased in some instances by 600 per cent by the use of an insecticide?

In 1938, the Bureau of Entomology and Plant Quarantine issued a circular entitled, "Losses Occasioned by Insects, Mites, and Ticks, in the United States." It brought together the best estimates then available on the losses caused by about 60 of the more important insect pests. The entomologists thought those particular pests caused losses amounting to more than 1½ billion dollars annually, without including many other insects pests that often cause considerable damage. Ten years later, in 1948, the best estimates available led entomologists to consider the annual losses due to insects in this country at approximately 4 billion dollars.

The hornfly, which feeds on cattle, is considered by most entomolo-

(Continued on page 164)

## NOTICE TO PROCESSORS

### TO ALL LOUISIANA PROCESSORS OF SUGARCANE FOR SUGAR

This is to notify and advise you that a meeting of all Louisiana processors of sugarcane for sugar has been called and will be held at the Agricultural Building, Thibodaux, Louisiana, on Wednesday, March 9, 1949 at the hour of 10:30 o'clock A. M.

The purpose of this meeting is to elect processor representatives to serve on the Louisiana Grower-Processor Committee.

J. J. MUNSON

# FOREIGN LABOR

The following letter was received by Mr. Chas. A. Farwell, Chairman of the League's Labor Committee, from Mr. Howard T. Bond, of the South Coast Corporation, on February 17, 1949.

Dear Mr. Farwell:

This is a short report on the employment of British West Indian Labor (Jamaican and Barbadian) during the grinding season just past.

Two hundred and ninety two of these laborers were transported by Greyhound bus from the neighborhood of Beaver Dam, Wisconsin about October 15, 1948. They were distributed to Louisiana employers as follows:

| | | |
|---|---|---|
| Harry L. Laws Co. | 12 | laborers |
| L. M. Burguieres Co. | 15 | " |
| Clovelly Farms | 44 | " |
| The South Coast Corp. | 221 | " |
| | 292 | |

Wisconsin employers paid $20.00 towards transportation to Louisiana and the actual cost was just about that figure. Louisiana employers were required to pay $5.00 for subsistence enroute.

After a short period of adjustment, the service rendered by these workers was entirely satisfactory. As a matter of fact, none of the employers had any complaint, and some of them reported the service rendered to be excellent.

It is to be noted that none of this labor became involved with the law, nor did they have trouble with the local labor.

The only undesirable feature connected with the employment of these Jamaican and Barbadian laborers is the obligation to repatriate them at the end of the contract. The cost of repatriation amounts to $60.00 per worker and therefore makes their employment expensive.

Ways and means of reducing this

(Continued on page 164)

# NOTICE TO GROWERS

## TO ALL LOUISIANA INDEPENDENT GROWERS OF SUGARCANE FOR SUGAR HAVING NO FINANCIAL INTEREST IN THE MANUFACTURE OF SUGAR

This is to notify and advise you that a meeting of all Louisiana independent growers of sugarcane for sugar has been called and will be held at the Agricultural Building, Thibodaux, Louisiana, on Thursday, March 10, 1949 at the hour of 1 o'clock P. M.

The purpose of this meeting is to elect grower representatives to serve on the Louisiana Grower-Processor Committee.

W. F. GILES

# CHEMICAL CONTROL OF JOHNSON GRASS

*R. H. Barrow, Manager Smithfield Plantation*

The increasing infestation of Johnson Grass on Smithfield Plantation, although a fallow plowing program was carried out each year, was seriously reducing the sugarcane yield. The average yield had dropped to about 16 tons of sugarcane per acre.

The fallow plowing method used alone to eradicate Johnson grass on our sugarcane plantation is very expensive, especially so when you consider this work only destroys mostly the rhizomes, and the major problem is to prevent seedling germination and growth on the lands after planted to sugarcane.

To combat the above mentioned problem on Smithfield Plantation, the method used was the treatment of land planted to sugarcane by spraying with two pounds of 2-4-D acid equivalent, in the form of sodium salt, at the rate of 100 gallons of water per acre, using 120 pound pressure to apply.

Three hundred and forty acres of plant cane in the fall of 1947 was sprayed after being rolled behind the planting. This work was done in the month of September.

In the Spring of 1948, after the cane was shaved and a good stand was out, the row was sprayed in 810 acres of plant cane and left open for approximately fifty days. This work was accomplished during the months of April and May.

After a mechanical lay-by, a blanket spraying of the entire row was made in 550 acres.

The three row, 600 gallon Chemical Cultivators were built on Smithfield. These cultivators are serviced in the fields with a truck equipped with a 1300 gallon tank

## 1948-49 LOUISIANA PRODUCTION

| | | |
|---|---|---|
| Total tons of cane ground for sugar | | 5,459,637 |
| Total tons of net cane ground for sugar | | 5,256,644 |
| Total tons of net cane ground for sirup | | 20,344 |
| Total sugar produced, lbs. | | 773,668,561 |
| Total sugar produced, R. V., lbs. | | 793,074,653 |
| Sugar est. in Magma, R. V., lbs. | | 1,511,430 |
| Total Sugar M. & Est. R. V., lbs. | | 794,586,083 |
| Total Sugar M. Est., R. V., tons | | 397,292 |
| Sugar Est. in Com. Molasses, R. V., lbs. | | 11,117,387 |
| Total sugar M. & Est., including Ed. Molasses, R. V., lbs. | | 805,703,070 |
| Total sugar M. & Est. including Magma & Ed. Molasses, R. V., tons | | 402,851 |
| Sugar per net ton of cane M. & Est. including Magma, R. V., lbs. | | 151.16 |
| Sugar per net ton of cane M. & Est., including Magma & Ed. M., R. V., lbs. | | 153.27 |
| First Molasses | 2,192,738 | |
| Second Molasses | 1,823,747 | |
| Sirup | 494,726 | |
| Blackstrap | 32,850,029 | |
| Blackstrap Est. in Magma | 429,491 | |
| Blackstrap M. & Est. at 80 Brix | 36,218,220 | |

# YOUR COUNTY AGENT REPORTS

## The 1948 Sugarcane Harvest in Avoyelles Parish

*by Kermit J. Ducote, County Agent*

Avoyelles Parish planted approximately 3500 acres of sugar cane in 1948 for sugar and syrup. About 60% of the cane crop was used for syrup due to high price and large demand of syrup previous to 1948. However, since the price of syrup has gone down, more of the cane crop has been used for sugar. It is estimated that about 15% of the cane crop in Avoyelles Parish was used for syrup. This reduction in syrup making was due mainly to lack of demand for syrup in 1948. In 1947, there were fourteen syrup mills grinding cane for syrup and in 1948 only 7 operated. Three of the seven mills operated part-time. The Pearce Mill at Evergreen, which has a capacity of 20,000 tons, ground only 5,000 tons this season.

The cane crop throughout the parish was considered normal in 1948 and somewhat better than 1947. The average production on harvested acreage was about 20 tons and the total production amounted to 60,000 tons. It was reported by some of the growers that approximately 3000 tons were abandoned due to the drought, shortage of labor, early freeze and lack of market for syrup.

Five hundred acres were irrigated during the drought and showed an increase in production. One farmer used sheep as a means of destroying Johnson grass and he reports that this means of controlling grass was so successful that he plans to buy more sheep for next year. Several other growers are also planning to use sheep in 1949.

Eighty-five per cent of the crop was shipped to the Meeker Sugar Refinery and 15% to other mills.

According to reports received from various growers, the acreage in 1949 will be reduced. Many of the small growers will not plant cane because of lack of market for syrup. It is estimated that 3000 acres will be planted in 1949.

---

## CHEMICAL CONTROL

(Continued on page 162)

and pump and cover approximately 90 acres per day.

Results have been very satisfactory and encouraging in all types of soil and varieties of cane.

At this time, it appears that a yield of 25 tons per acre can be expected on the cane acreage that has been chemically treated as described above.

### Report on Chemicals

Average yield on 689—28.5 tons. The following varieties were used —CP 29-120, CP 36-13, CP 36-105, CP 34-120

The Cane was virtually free from grass trash. About 3000 acres of land was fallowed plowed and turtled back before planting the 1949 cane crop.

A demonstration on Westover Plantation, Paul Pavy, Manager, was visited in November where the plant cane had been sprayed with chemicals and then a light cultivation. A few rows were not chemically treated or cultivated, this check plot had Johnson Grass and other grass 18″ high while the balance of the field was practically clean. Incidentally, the field of plant cane looks like a good field of cane in June.

## INSECTICIDES

(Continued from page 160)

gists to be in the 100 million dollar a year pest class. This insect wasn't even mentioned in the 1938 estimates. The hornfly is a classic example of an insect causing huge losses almost unknown, except to a few entomologists. It took the development of DDT to show actual loss figures.

Corn growers think adapted hybrid varieties, special planting arrangements, new methods of cultivation, heavy fertilization, and possibly irrigation, will produce yields far heavier than those obtained normally today. Far-seeing entomologists say 25 per cent additional yields of corn can be obtained by proper insect control methods. They say earworms, corn borers, aphids, flea beetles, rootworms, and a host of other insect pests, limit corn production by at least that amount. They add that corn is just one crop to consider in this connection.

Grains in farm storage are lost to the extent of 5 per cent per year because of insect pests, according to the older estimates. New studies, however, now indicate that losses to stored grain in farm bins may be from 1 to 2 per cent per month for the first six months after harvest. These new estimates do not include hidden weevil damage, which may become apparent only after the grain is in trade channels. If these new estimates are true, the older ones were short by more than 250 million dollars.

Stupendous losses, such as those, are mostly preventable by known methods of insect control now available.

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—o—

## FOREIGN LABOR

(Continued from page 161)

repatriation cost are now being studied and it is hoped that a material reduction in this cost can be secured. With the assistance of the Louisiana Employment Service, Farm Placement Officer, certification was obtained after the grinding season for the use of some of these Jamaican and Barbadian laborers to do field work until April 30, 1949. It is expected that this group will be transferred to employers in Illinois and Wisconsin on May 1.

A report will be made in the near future describing the procedure necessary for employers to secure British West Indian labor for the 1949 grinding season.

Yours very truly,

Howard T. Bond,
*Member, Labor Committee*

# LINK-BELT SPEEDER LS-50 *Agricultural* DITCHER

For cleaning drainage ditches on their sugar cane land, the Westover Plantations near Port Allen, La. use a Link-Belt Speeder LS-50, with a bucket built to fit the contour of the ditch and a 12-foot wide tread which enables machine to straddle the ditch. In addition to drainage work, the LS-50 is used as a crane during harvest season for handling and loading the sugar cane.

THE NEW LINK-BELT SPEEDER AGRICULTURAL DITCHER is a modification of the standard Link-Belt Speeder half yard capacity dragline, used by contractors in all parts of the country for many years. A machine of proven efficiency and long life, it is selected from the broad Link-Belt Speeder line as the model best suited to the needs of sugar plantations and other agricultural work. Special features developed for this service are: 1. Wide gage frame, with 10′-2″ clearance between tracks; 2. 24-inch tracks; 3. Creeper device, giving travel speed of 27 feet per minute; 4. Special shaped bucket, to fit the contour of the ditch. As a crane it has a lifting capacity of 4 tons at a 12-foot radius and a travel speed of 2.4 miles per hour.

## JACKSON MACHINERY COMPANY

**New Orleans 15, La.**

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LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA

*Builders of the Most Complete Line of* SHOVELS-CRANES-DRAGLINES

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## There is no guess work when you USE a

# VALOIS WEED SPRAYER

Three years of designing, researching, and testing under actual field application was necessary to develop the VALOIS WEED SPRAYER into a highly efficient and accurate spray machine for the application of Chemical Weed Killers on sugar cane, rice, corn, railroads, headlands, pastures, in canals, waterways, and along fence lines.

VALOIS WEED SPRAYER was designed and developed in the Sugar Cane Belt, was improved from actual use on cane farms, and is manufactured in the heart of the Cane Belt to meet the needs of and to service the cane farmers.

"Master"—400 gal. Tank (Blanket Spraying)

VALOIS WEED SPRAYER is adapted:

1. To spray 2, 4-D on cane as pre-emergence.
2. To spray 2, 4-D on cane as post-emergence.
3. To spray 2, 4-D on Off-Bar or top-of-row.
4. To spray 2, 4-D as lay-by or crop spraying.
5. To apply Sodium Chlorate or Atlacide on ditches, railroads, and canals.
6. To apply 2, 4-D in canals, ditches, and waterways.

VALOIS WEED SPRAY has:

1. "Master" Model with 400 gal. tank. "Featherweight" Model with 150 gal. tank.
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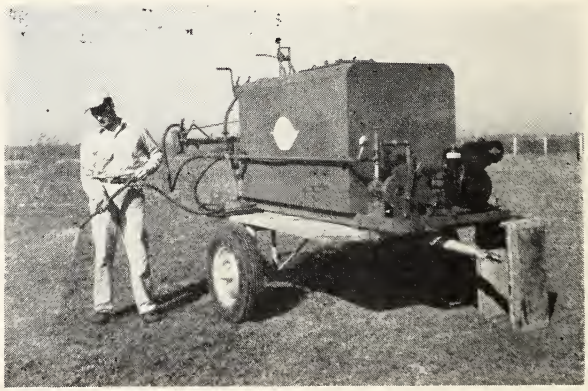
3. 2.6 H.P. Briggs & Stratton Air-cooled engine.
4. 18-foot spray boom built in three 6-foot sections, each separately controlled.
5. Mechanical boom folding and boom lifting and lowering devices.
6. Motor-pump clutch for power transmission.
7. Liquid pressure agitator.
8. Automatic nozzle adjustment arm.
9. Pressure regulator easily operated up to 150 lbs.
10. Auxiliary hose and spray gun connection for supplemental spraying.
11. All steel tank and frame, electrically welded into one powered spray unit on skids.



"Master"—400 gal. Tank (Auxiliary Hose Operation)

VALOIS WEED SPRAYER will distribute any Chemical Weed Killer in any volume ranging from 5 to 155 gals. per acre under any pressure up to 150 lbs. P.S.I.

For complete information write to

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### Napoleonville, Louisiana

# Stop Alligator Weed with

One early season application often controls alligator weed for the entire season. If weed growth is persistent, a second application of Du Pont 2,4-D just before the cane is laid by, keeps the crop free of weeds till fall.

With Du Pont 2,4-D Weed Killers you get these advantages:

**Adapted to any equipment**—Excellent in either concentrated or dilute sprays.

**Effective by air or by ground**—Ideal for airplane or ground spraying.

**Controls many weeds**—Stops most perennials and annuals that infest cane fields, grain crops, pastureland, ditches, roadsides and drainage canals. Also safe to use in irrigation canals during non-crop season.

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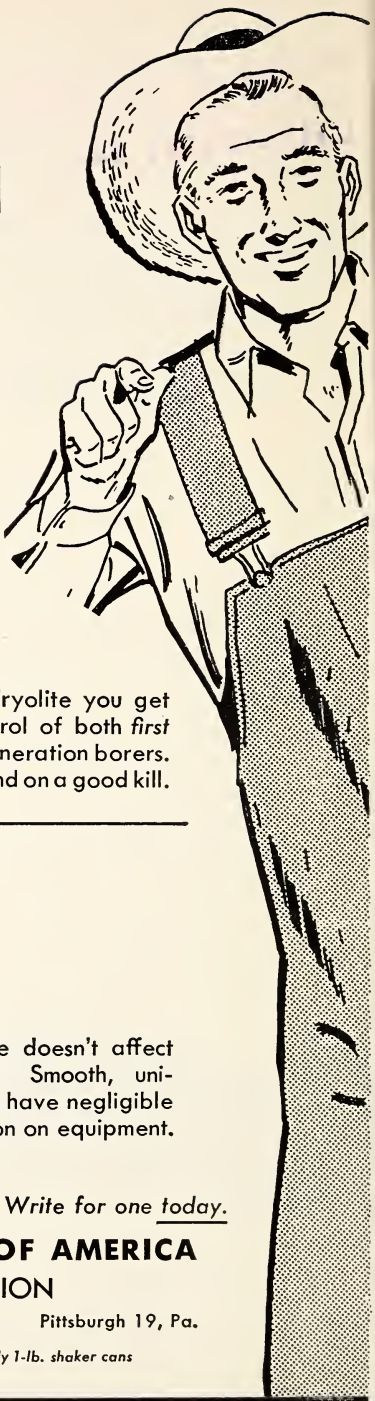

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**The Official Organ of the American Sugar Cane League of the U. S. A.**

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# CONGRESSMAN BOGGS ASKS HIGHER SUGAR PRICES

February 23, 1949

Hon. Charles F. Brannan
Secretary of Agriculture
Washington, D. C.

Dear Mr. Secretary:

Availing myself of your very kind suggestion that I confer from time to time with you in regard to the administration of the Sugar Act, I should like to lay before you certain aspects of the situation as it affects the Louisiana sugar industry, which, because of your manifold other duties, may not have come fully to your attention.

As you know, the price of sugar was depressed in 1948 to the extent that the raw price fell from $6.32 per hundred pounds to as low as $5.00. The income of the sugarcane farmer went down from $8.27 per ton of cane last year to a potential of $7.12 this year. The sugar industry experienced no price spurt with the removal of controls but, instead, was faced with a declining market within three months after that date.

You will doubtless recall that sugar was the first food product to be placed under price control and the last to be removed therefrom. In the summer of 1941, the price of raw sugar was rolled back from a free-market level of $3.80 per hundred pounds to a government controlled level of $3.50. Not only were sugar prices initially rolled back, but they were maintained on a level lower than that of commodities generally throughout the course of the war.

We fully recognize and appreciate the assistance which your Department rendered in the form of incentive payments made producers of sugarcane, but the fact of the matter is that such subsidies, when added to the artificially depressed price, did not result in sufficient income to the growers and processors of sugar in Louisiana.

By 1947, as the result of price considerations included in the purchase contract negotiated by CCC with Cuba, the raw sugar price reached a peak of $6.32 per hundred pounds, at which level the previous programs of incentive payments were terminated. At $6.32, however, the price of raw sugar had risen little more than half as much as all farm products relative to prewar. Moreover, although the $6.32 level did not in itself reflect increases commensurate with those of other farm products, even that price was destined to fall in 1948.

As a result, the Louisiana sugar grower will receive this year for his 1948 crop 13 per cent less than he received in 1947, despite a general increase in production costs. The raw sugar producer received for his 1948 crop $5.618 per hundred pounds, or approximately 10 per cent less than the $6.205 received in 1947. Further, last year's price for blackstrap molasses was approximately 26 cents per gallon, while this year, without a further break in the market, it will average no more than 10.5 cents, which is roughly a 60-per cent reduction in returns from blackstrap. Thus, reflecting molasses returns, the total income of sugar is about $1.50 per hundred pounds below last year.

We recognize that the Department is in no sense responsible for the drop in molasses values. On the other hand, the most unfortunate drop in the price of sugar has taken place in the face of the Sugar Act of 1948, which legislation was specifically placed on the statute books to maintain and protect the domestic sugar industry.

We appreciate your frank and open acceptance of your responsibility in this connection as demonstrated by your announcement accompanying the Determination of Sugar Consumption Requirements for 1949. Your announcement of a "price objective" was both clear and unequivocal when you stated that current sugar prices were below the levels indicated by Sec. 201 of the Act and that they were below the $8.40 price of refined sugar, which

(Continued on Page 180)

# CONGRESSMAN WILLIS DISCUSSES WAGE AND HOUR AMENDMENTS

March 10, 1949

The Honorable
Charles F. Brannan
Secretary of Agriculture
Washington, D. C.

Dear Mr. Secretary:

When the Wage & Hour amendments were before the House Education & Labor Committee, Dr. J. Norman Efferson appeared as an independent and disinterested witness for the Louisiana sugar industry. I am pleased to attach hereto copy of the statement made by Dr. Efferson, who is a recognized economist of Louisiana State University. The U. S. Department of Agriculture, last year, appointed Dr. Efferson to make a survey of rice production throughout the world. He will soon make a survey of rice production in South America for the Department.

It is somewhat startling to read the points made by Dr. Efferson, who indicates that based upon the records of 1943-47, the Louisiana sugar industry would not be able to support the 75c maximum, nor exist without the exemptions contained in Section 7(b)(3) and Section 7(c) of the Fair Labor Standards Act. Dr. Efferson suggests on Page 5 that "the only possibility for offsetting these losses (of the Louisiana sugar industry) would be to establish and maintain the price of sugar under the Sugar Act *sufficiently higher than the current price,* to offset the increased labor costs."

Therefore, I appeal to you, Mr. Secretary, as the Administrator of the Sugar Act and as the Government official charged with maintaining the domestic sugar industry, that you should make known to the House Education & Labor Committee and the Senate Labor & Public Welfare Committee the conditions in the sugar industry. I also request respectfully that you emphasize to these Committees of Congress the absolute necessity of retaining the exemptions in Section 7(c) for the benefit of processors in all domestic areas, in view of the seasonal nature of their harvesting and processing operations.

Finally, I suggest that based upon the testimony of Dr. Efferson for Louisiana and the facts concerning the other domestic areas, you should permit the price of sugar to increase enough for the domestic sugar industry to pay any increase in minimum wages made effective under the provisions of the Fair Labor Standards Act, and that you make such other and further adjustments in the price of sugar as may be necessary to carry out the provisions of Section 201 of the Sugar Act.

Very sincerely yours,
E. E. WILLIS
Member of Congress

---

# CONTACT COMMITTEE MEETING MARCH 22nd.

A meeting of the Contact Committee of the American Sugar Cane League will be held on Tuesday, March 22nd, possibly continuing on the following day, and Dr. W. G. Taggart, Director of the Louisiana State Experiment Station, has requested that the following notice regarding the meeting be printed in this issue of *The Sugar Bulletin.*

"At the request of Mr. Stephen C. Munson, I am calling a meeting of the Contact Committee for Tuesday, March 22nd, at 9:00 A.M. with the possibility that we will run over into Wednesday March 23rd. Please call at my office for instructions as to where the meeting will be held."

W. G. TAGGART, Director.

# NOTES ON ANHYDROUS AMMONIA

*by Harold T. Barr, Head Agricultural Engineering Research, Louisiana State University, Baton Rouge, Louisiana*

Anhydrous ammonia as a source of nitrogen is rapidly increasing and under present conditions it is the cheapest source of nitrogen available. There are several other desirable characteristics; it goes into solution readily combining with the soil particles, does not leach out of the soil, many plants prefer ammonia to nitrate nitrogen, and the application is less laborious and power consuming.

Ammonia is not a new fertilizer; but applying it as anhydrous ammonia to the soil is a new technique that has been in practice since 1943.

Anhydrous ammonia is a gas under normal temperatures and pressure. A pressure tank capable of 200 pounds working pressure must be used, as ammonia develops 75 pounds per square inch at 50 degrees F. and 197 pounds per square inch at 100 degrees F. and may often reach 225 to 250 pounds in tanks fully exposed to the summer sun.

The Extraordinary Session of the 1948 Louisiana Legislature passed Act No. 15 creating an Anhydrous Ammonia Commission for the purpose of promulgating rules and regulations setting forth standards that equipment for storage and dispensing of anhydrous ammonia must meet. Anhydrous ammonia is irritating to the skin and eyes, and will freeze or burn if spilled on the skin as a liquid. No brass or copper valves or fittings can be used as ammonia corrodes these materials with very short exposures.

Anhydrous ammonia can be bought in car lots of 14,000 gallons and can be stored in a 15,000 gallon steel tank. Do not fill the tank more than 85 to 90 per cent full as space must be allowed for expansion, without creating too great a pressure and popping off of the safety valve. A good number of 30,000 gallon tanks are now being installed for carload storage. The car lot storage tanks to be built according to the A. S. M. E. code for unfired pressure vessels and installed on concrete foundations.

Where less than carload lots of anhydrous ammonia is to be transported from bulk stations to farm tanks having a 1000 to 3000 gallon tank mounted, a four wheel trailer or truck can be used. If the transport tanks are used on the public highway, the vehicle should be equipped with internal baffle plates, have fittings protected by suitable guards and meet other state laws governing safety chains, brakes, etc.

Equipment for applying anhydrous ammonia in the field consists of a tractor mounted tank of 100 to 120 gallons built to withstand 200 pounds working pressure and equipped with quick cut-off valve, filler valve, vapor return valve, safety pop-off valve (set for 250 pounds per square inch), 300 pound pressure gauge. constant output reduction valve, and the necessary distribution manifold, hoses and applicators.

A constant output reduction valve that will maintain the same output in pounds of nitrogen regardless of tank pressure has been the bottle neck in several sets of equipment tested. A needle valve that is changed by hand as the tank pressure varies has been the most dependable valve up to date. However, several valves are now undergoing tests in the Agricultural Engineering Laboratory to determine their accuracy and adaptability for use on tractor units.

The anhydrous ammonia should be placed in the soil four to six inches deep and eight to twelve inches from the row. A disc hiller shovel cultivator should be placed so as to crowd dirt against the applicator and prevent any of the ammonia gas from escaping. If a white vapor of gas is observed coming up around the applicator shank this indicates that ammonia is escaping to

(Continued on Page 180)

# CROP NEWS BY PARISHES

## *from*

## *COUNTY AGENTS*

Resuming our news on the Louisiana sugarcane crop with the co-operation of our friends, the county agents, we have asked this time about the results of the crop just completed, and have received replies from the Agents representing the parishes listed below.

**Lafourche Parish.** C. J. Arceneaux has been appointed County Agent of Lafourche Parish, taking the place of Al Moreaux who is now the track coach at Louisiana State University. Mr. Arceneaux has advised us that the acreage planted to sugarcane in Lafourche Parish in 1948 amounted to 36,660 acres and that 34,170 of these acres were harvested for sugar. In 1947 Lafourche Parish had 36,755 acres in cane and harvested 33,860 for sugar.

The Production of cane amounted to 665,731 tons in 1948 for an average of 19.5 tons to the acre, compared with a cane production in 1947 of 552,820 tons and an average of 16.3 tons to the acre. These figures show that the production of cane increased 3.2 tons per acre in 1948 over the previous year.

**St. John Parish.** The three mills in St. John Parish ground 304,448 tons of cane in 1948, according to a report from Otis Broussard, County Agent. Mr. Broussard states that the production of cane per acre was slightly above 20 tons and that the yield of sugar per ton of cane averaged about 167 pounds. He says that the farmers of his district reported the mud and trash situation to be about the same in 1948 as it was in 1947.

It is estimated that in 1948 less than half of the cane crop in St. John Parish was harvested by machines due to storms and excessive rains.

**St. James Parish.** Joseph Lamandola, County Agent of St. James Parish, has advised us that his Parish produced 372,253 tons of cane in 1948 compared with a production of 295,000 tons in 1947. The canes averaged 20.5 tons to the acre this season and only 16.5 tons to the acre in 1947.

The sugar production per ton of cane amounted to about 165 pounds in 1948 whereas in 1947 the sugar yield averaged 174 pounds to the ton of cane.

The cane acreage in St. James Parish totaled 19,516 acres in 1948 and about the same number of acres will be used for the 1949 crop.

**Pointe Coupee Parish.** The 1948 cane acreage in Point Coupee Parish amounted to 10,780 acres, according to our report from A. B. Curet, County Agent, and these acres produced 221,736 tons of cane. The cane production in 1947 amounted to 147,738 tons.

The 1948 cane production averaged approximately 20½ tons to the acre and the sugar production averaged about 155 pounds to the ton of cane.

Mr. Curet expects the acreage planted for the 1949 crop to be about 9,000 acres or less.

**Terrebonne Parish.** The three sugar mills in Terrebonne Parish ground 383,909 tons of cane this season as compared with a grinding of approximately 305,800 tons in 1947. Richard L. Sonnier, County Agent, advised us on March 10th that the 1948 crop averaged 19.7 tons of cane to the acre and that the 1947 crop produced only 15.7 tons to the acre.

The sugar yield per ton of cane this season was about 152 pounds compared with a yield of 146 pounds per ton of cane in 1947.

The total acreage devoted to cane in Terrebonne Parish in 1948 was 21,958 and Mr. Sonnier estimates that the 1949 acreage will be about the same.

# MR. BOND REPORTS ON FOREIGN LABOR COSTS

February 22, 1949

Mr. Chas. A. Farwell,
Chairman, Labor Committee
American Sugar Cane League
1002 Whitney Bldg.
New Orleans, La.

Dear Mr. Farwell:

Following my report to you dated February 17, 1948 on the successful employment of British West Indian Labor during the past grinding season, I have prepared this report making suggestions for a procedure looking towards a reduction in the cost of employing this labor.

As soon as possible we should transmit our ideas and suggestions to the Chief Liaison Officer of the BWI Central Labor Organization in order that our suggestions, if accepted, may be incorporated into their plans for this year.

Present plans of Louisiana sugar cane growers indicate the need of from 1000 to 2000 outside workers for the harvest of the cane crop this fall.

The very favorable experience of four Louisiana employers during the past grinding season with British West Indian labor suggests that such labor would be welcome again.

However, since the cane harvest in Louisiana is the last major agricultural operation in the country with the exception of a similar operation in Florida, Louisiana employers will always be burdened with the cost of repatriating such foreign labor.

The most favorable arrangement for repatriation costs $60.00 per worker to which can be added the $5.00 subsistence allowance to workers transferred to Louisiana from Wisconsin, to make up the extra cost of employing BWI labor.

This high total of extra costs will deter many Louisiana employers from using this labor and force them to seek labor from other less costly sources.

In an effort to reduce these costs the following suggestions are made.

1. That paragraph (3a) calling for the worker to pay his own reasonable transportation costs between employers should be enforced instead of the present arrangement of the old employer paying the fare to the new one. The limit in the contract of $36.00 will more than cover all transportation costs except under the most unusual conditions.

2. Since most of the BWI labor is brought into this country in June, July and August and finds work until about the end of the year averaging perhaps close to six months employment, it is suggested that each employer tax himself $10.00 per month for each laborer and that this money be turned over to the BWI Central Liaison Office in Washington to be kept in a special repatriation account for each laborer. The BWI Central Liaison Office will then reimburse that employer who bears the expense of repatriation, to the extent of the fund in each workers name. When the amount credited to any worker reaches $60.00 the BWI Central Labor Office will so notify his employer who will then stop his contributions.

Even under this plan Louisiana employers will find BWI labor expensive since such labor employed for 2½ to 3 months will require a contribution of about $30.00.

Respectively submitted,
HOWARD T. BOND,
Member Labor Committee

# THE MARKETS

(March 11, 1949)

The completion of the marketing period for Louisiana raw sugar has confined local activities to developments in blackstrap molasses and these have continued to be discouraging.

Since the report in our February 15th issue, five sales of Louisiana Blackstrap have been recorded. The first was on February 16th when the price dropped a half a cent a gallon to 6½ cents, in bulk f.o.b. plantation, and the last was on February 28th at 6¼ cents a gallon.

Between these two sales the market made a mild comeback when sales were recorded on February 18th at 6¾ cents and at 7 cents a gallon, but this strength was quickly spent and a decline on February 24th to 6¾ cents a gallon was followed on the last day of that month by the 6¼ cent transactions.

Louisiana Blackstrap Molasses has now declined to a point that is below the price at which this product was selling at the close of the 1941 marketing season. Throughout the entire month of March 1941 blacktrap was quoted at 7 cents a gallon.

The records of the Cane Products Trade Association show that the last previous sale of Louisiana Blackstrap Molasses at 6¼ cents a gallon took place on November 23rd, 1940, over eight years ago. These records also show that Louisiana Blackstrap reached its highest point on November 28th, 1947 when a local dealer purchased a quotable quantity at 28 cents a gallon, in bulk f.o.b. plantation.

The weekly average prices since our last report have been as follows:

Week ending February 17th, 1949, Blackstrap 6.8 cents.

Week ending February 24th, 1949, Blackstrap 6.89 cents.

Week ending March 3rd, 1949, Blackstrap 6.25 cents.

The average price of Louisiana Blackstrap through the week ending March 10th is 10.22 cents a gallon.

The Blackstrap Marketing Period has three week more to go, March 31st, 1949 being the last day in the period.

## Sugar Developments

Developments in the sugar markets have taken place in New York, and we quote from the March 11th weekly summary of Lowry & Company, Inc., sugar brokers with offices in New York, Philadelphia, and New Orleans to bring our readers up-to-date on this market. Lowry & Co., Inc., report that during the week ending March 11th "Refined sugar prices continued unchanged with the exception of Sucrest's offering made on March 8th changing their prices to $7.87 f.o.b. refinery Brooklyn, for March delivery, representing a decline of eight points. During the week Atlantic Seaboard refiners generally advised that the present $7.75 contracts would have to be completed promptly. Distribution figures showed a sharp pick-up over the previous week, particularly on the part of beet processors, reflecting complete liquidation of their January 3rd contract balances. With a noticeable scarcity of re-sales and daily exhaustion of cheaper contracts, more new business at the $8.00 is being entered daily.

"Raws have been somewhat heavy throughout the week. Many sellers who talked 5.80 cents at the beginning of the week have gradually reduced their ideas, so that at the close there is a fair line of sugar available at 5.75 cents with the possibility that some prompt parcels could be obtained a few points lower. Refiners ideas seem to be uniformly 5.70 cents, at which price we believe several buyers could be found * * * ".

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# TIE VINES IN SUGARCANE CUT WITH 2, 4-D SPRAYING

Tie weeds in sugarcane fields—mostly red morning glory, cypress vine and button tie vine, the first being the worst—let go their smothering hold when sprayed from the air with 2, 4-D. Not only has this treatment in Louisiana increased the tonnage of cane, says the U. S. Department of Agriculture, but it has permitted the better sunned plants to accumulate much more sugar.

According to Leo J. Hebert and George Arceneaux, Department agronomists who carried on these studies, treatment that killed out almost entirely the canopy of climbing weeds not only increased the yield of sugarcane but increased the sugar content as much as 52 pounds to the ton. Another advantage brought out in the experimental plantings, and on commercial plantations where use of 2, 4-D has been adopted, is that the absence of the ropelike vines facilitates machine harvesting which in some cases had become impossible. This interference with machine harvesting was particularly noticeable where the cultivation had been by machine and there was no hoeing off of these vines after the crop had been "laid by."

The airplane spraying is strikingly well adapted to these canefields, say the experimenters. When the vines come to the tops of the canes, the killing spray settling on them gets to the roots by transference through the plant, which is one of the peculiarities of this herbicide.

The experimental tests showed that ½ pound to the acre of the amine salt of 2, 4-D killed practically 100 per cent of the morning glories (red-flowered) and cypress vine in these fields. This quantity the researchers consider is enough,

although use of one pound of the salt killed every morning glory plant. In all these plots enough of the spray got through the vine canopy to kill even the small weeds of these species that had not yet climbed very far up the sugarcane plants or had not even started to take hold.

Herbert and Arceneaux suggest the planters have patience in the use of 2, 4-D. Their advice is "wait until most of the tie vines that are going to grow that year get a good start, but not until they have made a canopy and done damage." By repeating the treatment year after year, they say, the land will finally be freed of morning glory seed, which generally remains viable in the ground for a long time.


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## Growers Elect Representatives On Grower-Processor Committee

At a statewide meeting of producers of sugarcane held at the Agricultural Building, Thibodaux, Louisiana, on March 10th the following grower representatives to serve on the Grower-Processor Committee were elected:

J. J. Shaffer, Jr.
W. F. Giles
Ed. Schexnayder
Charles Landry
Maurice Tregre
Fernand Price
C. A. Duplantis

The above named committee was authorized by the meeting to select alternates or replacement members as needed until the next election is held.

—o—

## Processors Elect Representatives On Grower-Processor Committee

At a statewide meeting of Louisiana processors of sugarcane for sugar held at the Agricultural Building at Thibodaux, Louisiana, on March 8th the following individuals were elected to serve as processor representatives on the Grower-Processor Committee:

George L. Billeaud
J. J. Munson
Walter Godchaux, Jr.
Irving Legendre
J. P. Duhe

*Alternates*

E. W. McNeil
C. S. Churchill
T. M. Barker

The Committee members were authorized by the meeting to select members of the Committee and alternates as needed until the next election is held.

## ANHYDROUS AMMONIA

(Continued from Page 174)

the air. The rate of delivery of the ammonia is in relation to time and the speed of your tractor must be determined for your application. Each manufacturer of equipment for applying anhydrous ammonia should supply with each unit a chart showing the gauge pressure, spacing, number and size of openings and speed of tractor required to apply a definite amount of nitrogen per acre.

—o—

## HALE BOGGS

(Continued from Page 172)

was the price prevailing when controls were discontinued.

Although we entertain the hope that it may be eventually brought about, your price objective—the objective of the Sugar Act—has not yet been realized. Rather, the mild stimulus given prices by the initial announcement of the present quota has been dissipated and the price of raw sugar today is substantially no higher than that prevailing just prior to your announcement.

Since producers in Louisiana have already sold by far the greater part of their 1948 crop sugars, the opportunity does not present itself for obtaining appreciable relief on the past crop. It has been my observation, however, that improvement in the sugar market is a condition not usually affected overnight, but one which normally requires a period of months. Accordingly we are at this time already looking forward to the crop which we will start harvesting in October of this year.

The price objective contained in Sec. 201 of the Sugar Act currently would require a refined price of approximately $9.00 per hundred pounds. Present market quotations are $8.00 per hundred pounds, and it is understood that some business is still going at $7.75. If the Louisiana sugar industry is to be adequately maintained, it is highly essential that sugar prices reach a

(Continued on Page 182)

## You cannot guess when applying Chemical Weed Killers . . .
## There is no guess work when you USE a

# VALOIS WEED SPRAYER

Three years of designing, researching, and testing under actual field application was necessary to develop the VALOIS WEED SPRAYER into a highly efficient and accurate spray machine for the application of Chemical Weed Killers on sugar cane, rice, corn, railroads, headlands, pastures, in canals, waterways, and along fence lines.

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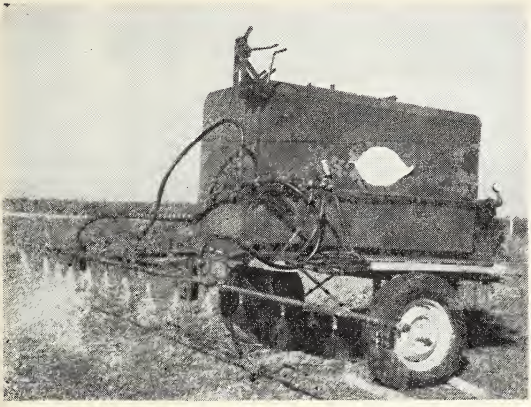

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5. To apply Sodium Chlorate or Atlacide on ditches, railroads, and canals.
6. To apply 2, 4-D in canals, ditches, and waterways.

VALOIS WEED SPRAY has:

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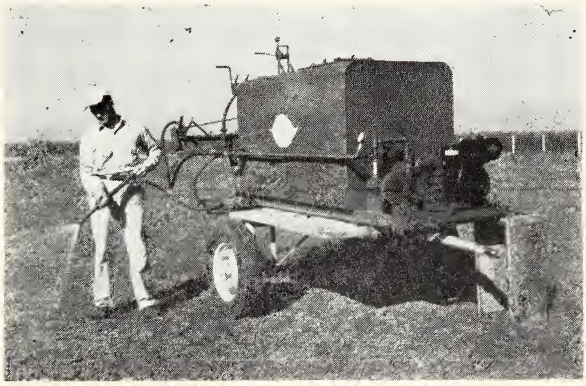
7. Liquid pressure agitator.
8. Automatic nozzle adjustment arm.
9. Pressure regulator easily operated up to 150 lbs.
10. Auxiliary hose and spray gun connection for supplemental spraying.
11. All steel tank and frame, electrically welded into one powered spray unit on skids.



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## HALE BOGGS

(Continued from Page 180)

reasonable level prior to the harvest and sale of the 1949 crop.

We sincerely trust that you will exert your efforts to bring about an improvement in market prices in order that the Louisiana industry may in the coming harvest enjoy the benefits to which it feels entitled under the Sugar Act. As a practical suggestion and as one which I am convinced would be highly effective, I think a statement on your part that you have no intention of reallocating any deficits at this time because there is too much uncertainty about deficits, which can be more definitely established in the late summer or early fall, would be helpful. This would have the immediate effect of demonstrating your intention of carrying out the price objective which you suggested in the press release of December 23.

I suggest this, because the sugar market has not reacted constructively to your announced price objective, giving evidence of some doubt in the minds of persons in the markets as buyers or sellers that it is your intention to take any affirmative action before the bulk of the Cuban and Puerto Rican crops come on the market. I should like to suggest that a simple statement along this line written to me would be sufficient, unless you prefer to release it to the press officially.

Trusting that you will agree to take this practical action with a view to stabilizing the market more in keeping with Section 201 of the Sugar Act, I am

Sincerely,

HALE BOGGS, M. C.

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# THE SUGAR BULLETIN

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l. 27 NEW ORLEANS, LA., APRIL 1, 1949 No. 13

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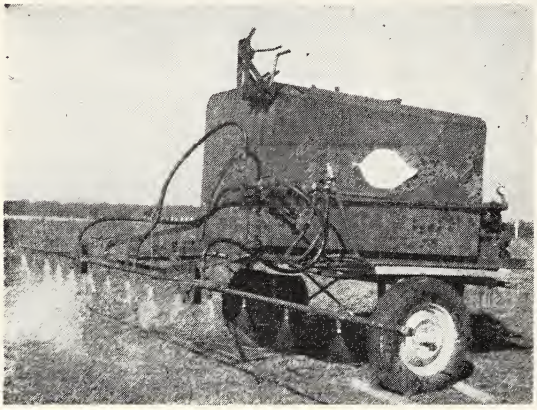

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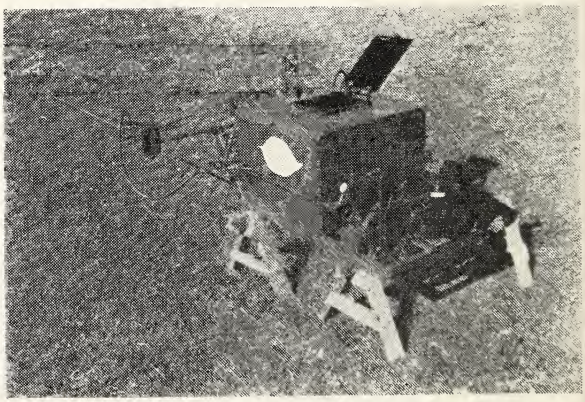

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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

**The Official Organ of the American Sugar Cane League of the U. S. A.**

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# IN WASHINGTON WITH C. J. BOURG

I am pleased to report that there has appeared in recent weeks the very complete work of Earl B. Wilson, who has published four volumes containing a description of sugar in the war and post-war period.

Also, there is a volume published by Joshua Bernhardt, which describes in a compact way all Government action during the first and second world wars, in connection with sugar.

Both of these works are a valuable addition to any sugar library and form ready references to what has gone on in the periods covered.

UNITED STATES DEPARTMENT OF AGRICULTURE

March 22, 1949

Hon. Hale Boggs
House of Representatives
Dear Mr. Boggs:

Your letter of February 23 with regard to the position of the Louisiana sugar industry is very much appreciated. We are particularly pleased to have your analysis of the operation of the Sugar Act as it is affecting Louisiana producers.

The concern which you express with respect to the plight of the Louisiana sugar industry is shared by the Department of Agriculture. We are particularly concerned with certain factors which are contributing heavily to the lowered returns which you described. As you know, sugar recovery in Louisiana mills has been declining in recent years. A rather considerable number of mills in Louisiana produced less than 140 pounds of sugar per ton of cane in the past grinding season. It is significant that this total recovery is less than the grower's share of the sugar recovery from a ton of cane in a number of other domestic areas. The average rate of sugar per ton of cane in Louisiana has declined from 165 pounds in 1941 to about 146 pounds in the 1948 season. Needless to say, this loss contributes substantially to the declining returns of the Louisiana industry.

But the problem does not stop there. Operating costs are increased for the mills and their efficient operation is seriously impaired by the very substantial amount of trash which has been delivered during the past few years with Louisiana sugarcane. This factor, together with the fact that cane is frequently allowed to lie in the fields for a considerable number of days before delivery, contributed significantly to the lower recovery of sugar as well as to the higher operating costs. We think it is pertinent to point out these problems because their solution is equally as important to the Louisiana industry as the price of sugar.

Following the announcement of the 1949 sugar consumption requirement determination, wholesale refined sugar prices advanced 25 cents per 100 pounds. In addition, the spot price of raw sugar, duty paid New York, has recently increased from 5.60 cents to 5.75 cents per pound. However, as you point out, these prices are no longer of major significance to Louisiana producers since most of their 1948-49 crop has been marketed. Nevertheless, we shall continue to watch the price situation very closely and will do everything within

(Continued on page 196)

# SUGARCANE INSECT INVESTIGATION 1948

*A. L. Dugas, C. E. Smith and E. J. Concienne, Department of Entomology, Louisiana Agricultural Experiment Station*

## Borer Seasonal History

Observations in the early spring of '48 on the survival of overwintering borers indicated the possibilities of a light borer infestation. This indication was correct, for in all of our observations on first and second generation borers we did not find any acreage with a borer infestation sufficiently high to justify dusting. Consequently, there was no cane dusted in 1948 on a commercial basis for the control of the borer. Although the results of third generation tests showed that some third generation treatment would have been highly profitable. Even considering the low survival of overwintering borers, the number of first generation eggs was extremely small in every field examined. The same was true of second generation eggs, and the borer infestation appeared to increase but very little in the hot, dry weather conditions prevailing in June and July. Although second generation injury was extremely light in general a limited number of localized areas examined some damage.

Considerations must have been favorable for third generation egg deposition and borer development in some areas for this generation accounted for a fair amount of damage in certain fields. Of course, the cane was small and suffering from dry weather, making it more susceptible to late injury. Harvest time observations revealed that there was a comparatively high percentage of joints bored on some plantations in view of the scarcity of borers earlier in the year. However, it was quite evident that the actual damage was not as heavy as is ordinarily expected from that percentage of joints bored since much of the infestation was in the top joints.

Because of the fact that there was practically no second generation damage some significant gains were obtained from third generation control.

## Survival of Overwintering Borers Of 1948 and Prospects Of The Borer Infestation for '49

Examinations of cane trash to determine the status of overwintering borers were made during the period of February 7 to 19. From the results in Table accompanying, it is evident that there will be a tremendous carry over of borers in most of the locations examined. Although these figures on total populations would not be an average of what one would expect for the entire cane belt, they do give an indication of a heavy carryover in the usual heavy borer areas and an expected light mortality in general.

A population of 8000 overwintering borers to the acre is an exceedingly heavy one. Even the average of 2,892 live borers per acre is not an ordinary ocurrence. With the delay in field work in most areas, there are possibilities of a heavy first generation infestation where a sufficient number of borers entered hibernation.

## Preliminary Tests on Control Of The Fall Armyworm And The Lesser Cornstalk Borer

The fall, armyworm and the lesser cornstalk borer sometimes appear in destructive numbers on sugarcane and corn in the southern part of the cane belt. Each year the armyworm is becoming a more important pest of young rice, and a considerable acreage of rice was treated with DDT or toxaphene in 1947 and '48 for its control. The value of armyworm control on young corn is still questionable, since rapid recovery of the plants usually follows an early infestation.

Extremely heavy infestations of the armyworm, and the lesser cornstalk fect stand, while stands in the untreated plots were almost totally destroyed.

(Continued on page 194)

# FALLOW PLOWING

March 16, 1949

Mr. Marcel J. Voorhies,
General-Manager,
American Sugar Cane League,
414 Whitney Bldg.
New Orleans, La.

Dear Marcel:

Recognizing the fact that we have very little specific information on just how often Johnson grass lands should be fallow plowed, the following letter was written to several "experts" on the subject:

"I have been trying to get a formula showing the 'right time' to plow under Johnson grass when lands are being fallow plowed.

"I realize that Johnson grass growth patterns are affected by the time of year and the amount of moisture available, but taking these things into consideration, when would you say does the above-ground growth more or less stop pulling on the stored carbohydrates in the roots and start the reversal of the process, namely, putting carbohydrates back into the root system?

"When does the Johnson grass plant make a root that is capable of starting an entire new plant should this root become detached from the main plant?

"Any information you can give me on these questions will certainly be appreciated."

In order to avoid the delay involved in getting permission to publish letters, as is required by certain Governmental agencies, I am quoting you below the letters without identifying their authors, as I believe it is necessary that we get this information to cane growers as promptly as possible.

(1)

"The information which you requested in your letter of February 7 is somewhat of a poser. We can give you some observations which we have and others report in the literature concerning rhizomes of the Johnson grass plant. It has been our observation that just about heading time when a plant starts from seed that it puts out rhizomes. We did not cut these off to see whether they would grow, but we presume that they will since they look as if they would. If a plant comes from a rhizome, we have noticed that it can start putting out new rhizomes almost immediately and these are capable of growing, since when the main plant is removed, the rhizomes left in the ground will start sending up shoots.

"As to the right time to plow under Johnson grass, it is pretty hard to give any specific information. We are starting tests at the present time to continue through the season as to the starch reserves and the effect of mowing and re-growth on these starch reserves. I am somewhat of the opinion that it is not just the exhaustion of food materials which does the work in fallow plowing but rather the loss of water because new water absorbing roots are not set. It is probably a combination of both.

"I trust that this rather inadequate answer will be of some value."

(2)

"In 1946 I examined numerous Johnson grass plants of all types and stages of growth under fallow plow conditions-flat eradication of rhizome plants. Based on my observation of that year and on observations made each year since then I would say that during the spring, before the weather turns off real hot ordinarily it takes about three weeks for new rhizomes to begin to grow out to anything but a spur length, consqeuently there could be but little storage of carbohydrates until about that length of time. When soil moisture conditions are favorable and the weather turns off hot, a much more rapid development of new rhizomes occurs and therefore also storage of carbohydrates; the period reduces to from three to about two weeks. I have found plants coming from old rhizome pieces to have put out new rhizomes varying from one to four inches in length in three weeks, and as you know from then on these rhizomes

(Continued on page 196)

# YOUR COUNTY AGENT REPORTS

## Crop Report for Iberia Parish as of March 15, 1949

*by*

*W. E. Williams, County Agent*
*Iberia Parish, Louisiana*

MR. WILLIAMS

Iberia Parish farmers produced a total of 597,399 tons of sugarcane for sugar purposes in 1948 and an estimated 1600 tons for syrup purposes giving a grand total of 599,000 tons for the entire crop. This was produced on 36,959 acres of which about 7% was used for seed purposes. Thus 34,359 acres producing 599,000 tons of cane gave an average of 17.43 tons per acre.

The six sugar mills operating in Iberia Parish ground a total of 454,740 tons of Iberia Parish cane while 142,659 tons were shipped to mills in the surrounding parishes for processing.

Most of the mills of the parish started their grinding operations during the last week of October or the first week of November in 1948 and the last mill closed January 18, 1949.

Due to inclement weather during January, February, and early March sugarcane farmers are getting off to a slow start this year. Very few farmers have been able to shave or hoe their cane and off-bar same, Therefore, it is estimated that they are about 30 days behind in normal operations. With the advent of good weather it is possible that many farmers will make up for lost time due to the fact that more of them are now highly mechanized and can catch up much more rapidly than in previous years when they were not as highly mechanized as at the present time.

The labor situation in the parish can be considered unsatisfactory in some localities to fairly satisfactory in others.

Very few farmers have been able to prepare their lands and plant their corn to get this operation out of the way for sugarcane work. This means an additional delay.

Both plant and stubble cane, in most of the parish, have come up to a fair to good stand. With a fair break in weather conditions and an adequate supply of fertilizer it is expected that this year's crop will be fairly close to normal.

Quite a large number of growers, especially those operating farms consisting of 120 acres or more, are going heavy into solid beans preparatory to planting the 1950 sugarcane crop. In many instances these farmers are using heavy applications of superphosphate and potash under their solid beans.

Since soil analysis show a deficit in phosphoric acid and potash in most sections of the parish this appears to be an excellent way of returning these elements to the soil in a most economical manner.

Result demonstrations and outfield tests conducted by agricultural leaders in cooperation with sugar growers during the past several years have proved definitely that the application of phosphoric acid and potash pays a handsome dividend in most sections of the parish.

# CATTLE AND SHEEP IN CANE ROTATION

*by A. E. Camus, County Agent, West Baton Rouge Parish*

In 1936 Mr. H. Wilkinson, III, field manager and part owner of Poplar Grove Plantation, decided to put 56 acres of land, 100% infested with Johnson Grass, into pasture. This practically started Mr. Wilkinson in the cattle business and using cattle to control Johnson Grass. This tract of land was put into field crops 6 years later or in 1942, yielding 100% more than when it was turned into pasture. About 1940 Mr. Wilkinson's average yield of sugarcane was exceptionally low and he reduced his acreage about 365 acres, with an estimated saving of $14,000. Still in 1942 with this reduced acreage he made 4,000 pounds more sugar than with his larger acreage. Since then Mr. Wilkinson's cattle project has become one of the main money crops of his farm operations.

The following field plots Nos. 1 and 2 were so infested with Johnson grass that in 1942 and 1943 it was turned into pasture. The yield on these fields in 1942 and 1943, as plant and first year stubble, averaged about 9 tons per acre.

### Plot No. 1—40 Acres

Forty acres were put into pasture in 1942, the land was broken, leveled, and seeded to clover. A very substantial revenue was acquired from the cattle and clover seed. In 1946 the land was fallow-plowed and in October was planted to cane. The cane came up to a good stand, but there was still some Johnson Grass on the ditch banks and some seedlings. Mr. Wilkinson decided to put sheep on this acreage, so he had to make it sheep proof. The cattle fence was already there so he put hog wire around it to make it sheep proof. Ditch bank plows were also used to cut the banks down and destroy as much of the grass as possible. On May 15, 40 sheep were turned on this field. About 80 pounds 32% nitrogen was applied in April. This field received 1 hoeing.

### Plot No. 2—93 Acres

This plot was put into cattle in 1942. In 1941 and 1942 the plant cane and stubble averaged about 9 tons. Of course, a cattle fence had to be erected and cattle remained on this pasture from 1942 to 1946. In the spring of 1946 a crop of corn and beans was planted. This was turned under in the fall of 1946 and the cane was planted. About 23 pounds of Melilotus Indica was seeded after planting. The spring of 1947 was an exceptionally bad year for Melilotus Indica, but this field had a perfect stand and made a tremendous growth before being turned under when they started the cultivation of the cane. Most of the fields of Melilotus Indica on the plantations were very poor, due to the cold wet winter as compared with the Melilotus Indica on the land that had been pastured. The cane came up to a perfect stand, the cane was hoed once, only the weeds cut out. The cost of cultivation was at the minimum because of the good stand and good condition of the land. Eighty pounds of 32% nitrogen was applied per acre. One hundred and sixty-four sheep were turned on this field on August 15. This field like all fields that had been layed out, when put back into cultivation had a heavy infestation of tie vines. It appears that the sheep, put in even at this late date, had destroyed much of the grass and the tie vines. This 93 acres, which is a part of 116 acres of net cultivated land was fenced and made sheep proof at a cost of $492.00—broken down as follows: $300 woven wire or hog wire; $15 staples; and $175 labor, or a cost of $4.20 per acre. Of course, both of these fields were fenced already for cat-

tle, therefore reducing the cost of converting it to sheep pasture.

The results on Plot 1—40 Acres Variety 29-320—Sucrose 13.25—Harvested December 20-29, 1948. Virtually no grass or trash.

The results on Plot No. 2—93 Acres

Variety 34-120—78 Acres—average tonnage 35—12.20 Sucrose

Variety 29-320—15 Acres—average tonnage 32—12.90 Sucrose

Poplar Grove Plantation will fence in 250 to 300 additional acres with new cattle sheep fence.

## THE MARKETS

(March 29, 1949)

The price of Louisiana Blackstrap Molasses reached a new low on March 16th when this product sold in quotable quantity to a New Orleans dealer at 6 cents a gallon. No other sales have been reported since that date and, as we go to press, the quotation is still 6 cents.

The official marketing period for Louisiana Blackstrap ends on March 31st and it is a fairly safe assumption that there will be no market changing sales during the next two days. If this proves to be correct then the average price for the week ending March 31st will be 6 cents and the season's average price will be 9.699 cents a gallon.

A brief summary of the season's activities, gleaned from the records of the Cane Products Trade Association, shows the following:

The first quotable sale of Louisiana Blackstrap was recorded on October 18th at 18 cents a gallon. On October 20th the price declined to 17 cents a gallon. On November 3rd a sale was made at 15 cents and this price held until November 15th when the market declined another cent to 14 cents a gallon.

On November 18th the price dropped to 13 cents a gallon; on November 23rd to 12 cents; on November 29th to 11½ cents, and on November 30th to 11 cents.

On December 6th a drop to 9 cents was recorded and this price prevailed until the morning of December 13th when a quotable sale went into the records at 9½ cents a gallon. By the afternoon of this same day, however, the market was back to 9 cents and this price held, with only one additional sale, until January 6th when a drop to 8¼ cents was recorded.

On January 12th the price was 8 cents and on January 31 it was 7¾ cents. On February 8th and again on February 11th sales were recorded at 7 cents a gallon, and on February 16th the price was 6½ cents a gallon.

At this point the market strengthened a little and sales were recorded at 6¾ cents and at 7 cents on February 18th but the price slipped back to 6¾ cents on February 24th and was down to 6¼ cents on February 28th.

On March 16th the sale at 6 cents took place to record a new low for the season and also a new low for Louisiana Blackstrap since November 18th, 1940.


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A Summary of the Results of Examinations of Cane Trash to Determine the Status of Overwintering Borers.

| Plantation | Location | Row feet examined | Borer population | | | | | Live Borers Per Acre |
|---|---|---|---|---|---|---|---|---|
| | | | Alive | | | Dead Total | Percent Alive | |
| | | | Larvae | Pupae | Total | | | |
| | | Number | Number | Number | Number | Number | Percent | Number |
| Columbia | 1 | 50 | 40 | 1 | 41 | 6 | 87 | 5,945 |
| | 2 | 50 | 19 | 0 | 19 | 1 | 95 | 2,755 |
| | 3 | 50 | 11 | 0 | 11 | 2 | 85 | 1,595 |
| | 4 | 40 | 45 | 3 | 48 | 3 | 94 | 8,736 |
| | 5 | 40 | 36 | 3 | 39 | 6 | 87 | 7,098 |
| | 6 | 40 | 32 | 1 | 33 | 1 | 97 | 6,006 |
| Sterling | 1 | 50 | 1 | 0 | 1 | 4 | 20 | 145 |
| | 2 | 50 | 6 | 0 | 6 | 1 | 86 | 870 |
| | 3 | 40 | 8 | 2 | 10 | 3 | 77 | 1,820 |
| | 4 | 50 | 3 | 2 | 5 | 0 | 100 | 725 |
| | 5 | 50 | 3 | 0 | 3 | 0 | 100 | 435 |
| Camperdown | 1 | 40 | 7 | 2 | 9 | 5 | 64 | 1,638 |
| Oakbluff | 1 | 36 | 10 | 0 | 10 | 2 | 83 | 2,010 |
| | 2 | 50 | 2 | 0 | 2 | 0 | 100 | 290 |
| | 3 | 50 | 3 | 0 | 3 | 0 | 100 | 435 |
| Johnson | 1 | 40 | 10 | 2 | 12 | 0 | 100 | 2,184 |
| | 2 | 40 | 5 | 1 | 6 | 0 | 100 | 1,092 |
| Germania | 1 | 50 | 14 | 1 | 15 | 1 | 94 | 2,175 |
| Justine | 1 | 50 | 9 | 2 | 11 | 1 | 92 | 1,595 |
| Francis Marine | 1 | 40 | 28 | 4 | 32 | 0 | 100 | 5,824 |
| Fourmier | 1 | 40 | 40 | 7 | 47 | 3 | 94 | 8,554 |
| Stamply Luke | 1 | 40 | 44 | 4 | 48 | 1 | 98 | 8,736 |
| Frank Martin | 1 | 50 | 6 | 2 | 8 | 1 | 89 | 1,160 |
| | 2 | 40 | 16 | 0 | 16 | 0 | 100 | 2,912 |
| Rene Junca | 1 | 50 | 5 | 0 | 5 | 0 | 100 | 725 |
| | 2 | 40 | 11 | 1 | 12 | 1 | 92 | 2,184 |
| Bob Luke | 1 | 50 | 1 | 0 | 1 | 1 | 50 | 145 |
| | 2 | 40 | 7 | 5 | 12 | 0 | 100 | 2,184 |
| Oaklawn | 1 | 50 | 30 | 1 | 31 | 4 | 89 | 4,495 |
| | 2 | 50 | 22 | 1 | 23 | 2 | 92 | 3,335 |
| | 3 | 50 | 31 | 1 | 32 | 4 | 89 | 4,640 |
| | 4 | 50 | 14 | 0 | 14 | 1 | 93 | 2,030 |
| | 5 | 40 | 7 | 2 | 9 | 5 | 64 | 1,638 |
| | 6 | 40 | 35 | 4 | 39 | 6 | 87 | 7,098 |
| | 7 | 40 | 32 | 2 | 34 | 6 | 85 | 6,188 |
| Oxford | 1 | 40 | 16 | 3 | 19 | 0 | 100 | 3,458 |
| | 2 | 40 | 6 | 0 | 6 | 0 | 100 | 1,092 |
| | 3 | 40 | 15 | 0 | 15 | 3 | 83 | 2,730 |
| Martin Ridge | 1 | 40 | 21 | 1 | 22 | 0 | 100 | 4,004 |
| | 2 | 40 | 19 | 3 | 22 | 0 | 100 | 4,004 |
| Catherine (EBR) | 1 | 40 | 0 | 0 | 0 | 0 | --- | --- |
| Poplar Grene | 1 | 40 | 2 | 3 | 5 | 2 | 71 | 910 |
| Village | 1 | 40 | 4 | 0 | 4 | 0 | 100 | 728 |
| | 2 | 40 | 2 | 2 | 5 | 0 | 100 | 910 |
| Total & Averages | | 1936 | 678 | 66 | 74.5 | 76 | 91 | 2,892 |

## INVESTIGATIONS

(Continued from page 189)

borer existed in the lower area of St. Mary Parish in early April of 1948. The lesser cornstalk borer was so destructive to corn stands that several fields had to be replanted three or four times. The continuous supply of young corn must have accounted for the fact that several generations of armyworms were produced, since there was a continuous hatching of larvae until late August. Under these conditions three tests were conducted on armyworm control in which four to six applications of poisons were applied. Five per cent parathion proved to be the most effective insecticide, whereas five per cent DDT and 15 per cent toxaphene gave very little control. The yield of corn was doubled from the following treatments; 5 per cent parathion; 3 per cent gamma benzene hexachloride; and 10 per cent DDT.

In a test in another area where only one generation of armyworms appeared, the use of insecticides did not result in significant increases in corn yields.

Benzene hexachloride at the rate of 1.5 pounds of the gamma isomer per acre; toxaphene at 1 pound of the technical material; chlordane at 2.5 pounds; DDT at 10 pounds; and parathion at 1 pound per acre were tested as soil treatments for control of the lesser cornstalk borer. Parathion, benzene hexachloride, and chlordane were much more effective than the DDT. These materials resulted in a near per-

# LINK-BELT SPEEDER LS-50 *Agricultural* DITCHER

For cleaning drainage ditches on their sugar cane land, the Westover Plantations near Port Allen, La. use a Link-Belt Speeder LS-50, with a bucket built to fit the contour of the ditch and a 12-foot wide tread which enables machine to straddle the ditch. In addition to drainage work, the LS-50 is used as a crane during harvest season for handling and loading the sugar cane.

THE NEW LINK-BELT SPEEDER AGRICULTURAL DITCHER is a modification of the standard Link-Belt Speeder half yard capacity dragline, used by contractors in all parts of the country for many years. A machine of proven efficiency and long life, it is selected from the broad Link-Belt Speeder line as the model best suited to the needs of sugar plantations and other agricultural work. Special features developed for this service are: 1. Wide gage frame, with 10′-2″ clearance between tracks; 2. 24-inch tracks; 3. Creeper device, giving travel speed of 27 feet per minute; 4. Special shaped bucket, to fit the contour of the ditch. As a crane it has a lifting capacity of 4 tons at a 12-foot radius and a travel speed of 2.4 miles per hour.

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## FALLOW PLOWING

(Continued from page 190)

would have extended very rapidly under favorable growth conditions for the above ground plant parts.

"I trust that this information will satisfactorily answer the questions in your letter."

(3)

"Your letter of February 7 raises some very interesting points on which I feel there is room for much more work. As you will recall, results of our flaming experiments showed that the killing back had to be repeated about every 10 days to keep the Brix of juice in rhizomes going down. This of course doesn't mean that the green leaves developed between treatments did not put some solids back into the rhizomes but it shows that it took more to develop the leaves than they were able to put back in that length of time.

"As brought out by your second question, in fallow plowing you turn up and otherwise disrupt many roots, a sizeable proportion of which do not survive the ordeal. We do not have any information on the age-survival relationship in this connection and feel there is room for interesting research on the point raised."

"Along these lines, I believe that many of your readers will be interested in the following excerpts from an article entitled "Modern Methods of Controlling Vegetation and Woody Plants" as published in the October 1948 issue of "Railway Engineering and Maintenance":

"Perennials are plants that produce roots, rooting stems or root stalks that remain alive for several years. The primary function of the root stalks in food storage, and it has been found that the food reserves of roots in undisturbed areas are usually lowest during the blossoming periods and highest during early winter and early spring. As the top growth, after ripening, supplies food to the root system, the most effective stage for the destruction of these weeds is that which will prevent top growth from early summer until the end of the growing season.

"Of the chemicals found in recent years, 2, 4-D (2, 4-Dichlorophenoxyacetic acid) has perhaps been given widest attention. This 'growth regulator' is a hormone-like substance which has extraordinary ability to kill plants when applied to the foliage as a spray or dust. It acts chiefly on plants with broad leaves, and in the concentrations used it is almost harmless to practically all grasses except when grasses are in the seedling stage. 2, 4-D is not harmful to human beings or to animals, but continued exposure to large quantities should be avoided. It is used in a very weak solution, a small quantity going a long way. For this reason it is one of the least expensive herbicides."

Sincerely yours,
F. EVANS FARWELL,
Johnson Grass Control Committee, American Sugar Cane League

## IN WASHINGTON

(Continued from page 188)

our power to carry out the mandates of the Act, viz., that we maintain and protect the domestic sugar industry and that we provide consumers with supplies of sugar at reasonable prices.

**With respect to determinations of deficits in the various supplying areas, it is our policy to issue such determinations only when it appears that the area will be unable to fill the quota assigned to it and when the extent of the deficit is reasonably firm. You may be assured of the continuation of this policy.**

We shall continue to work closely with you and other representatives of the Louisiana sugar industry in the administration of the Sugar Act and in our efforts to improve the welfare of domestic sugar producers.

Sincerely yours,
CHARLES F. BRANNAN

---

The following is an article which appeared in the Journal of Commerce of March 23. This is definitely a con-

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structive move for building up the price structure progressively, with a view to a stronger price at the time of the 1949 grinding.

**Beet Sugar Quota Change Unlikely**

Washington, March 23. Rep. Hale Boggs (Dem., La.) today said he has been assured by Secretary of Agriculture Charles Brannan that there will be no re-assignment of Philippine and domestic beet area sugar quotas at this time.

Mr. Boggs said Secretary Brannan told him in a letter that "it is our policy to issue such determinations (of deficits) only when it appears that the area will be unable to fill the quota assigned to it and when the extent of the deficit is reasonably firm. You may be assured of the continuation of this policy."

The letter was written, Mr. Boggs said, because "in recent weeks there have been rumors in the sugar market that the Secretary was just about to reallocate deficits from the Philippines and from the beet area." He said this weakened the market.

"But the unequivocal declaration of the Secretary in his letter to me established the fact that there will be no reallocation of deficits until the facts are much more definitely known in the summer or in September," Mr. Boggs said.

He added that "I am completely convinced that the price of sugar is lower than it should be in order to fulfill the mandate of Congress, contained in Section 201 of the Sugar Act. According to that standard, the price of refined sugar should be almost 9c a pound. The Secretary is evidently and substantially in accord with my position in this matter."

Housewives have not protested the price of sugar, he said, and most resistance to price advances is from large industrial users "who are seeking a cheaper raw material for the products they manufacture."

---

March 3, 1949

Mr. James Gorman
American Cyanamid Company
New York City

Dear Mr. Gorman:

I would appreciate it very much if you will write me a little report on the status of the shipments of fertilizer to Louisiana.

As I told you when I was in New York, our greatest trouble last year was the fact that we applied the fertilizer so late. As you know, the final returns on the crop were 400,000 tons, which some of our people sincerely believe would have been 10 per cent greater if they had had their fertilizer delivered in January and February. I trust that you can give me some reassuring reports about your deliveries and schedules.

Very truly yours,
C. J. BOURG

March 16, 1949

Dear Mr. Bourg:

In reply to your letter of the 3rd, I am pleased to attach hereto a list showing the tonnage of Aero Cyanamid, Granular and Aeroprills, Ammonium Nitrate Fertilizer shipped to Louisiana by months during the current season. You will note that by March 11 we had practically completed all shipments with only 140 tons of Cyanamid and 772 tons of Aeroprills still to be shipped. These two lots will be on their way within the next few days and you and I can breathe easy again for this season.

For your information 7698.5 tons of Aeroprills are equal in nitrogen content to about 14,520 tons of Cyanamid so that, in terms of Cyanamid, we soon will have shipped 14,520 tons, or our full obligation for the current year.

You will note also that a substantial portion of the Aeroprills was shipped prior to the first of the year and that heavy shipments of Cyanamid were made in January and February. We tried to do a better job by your constituents this year than we were able to do last year, and I think we succeeded fairly well.

If I can supply you with any further information regarding the current situation, please feel free to call upon me.

Sincerely yours,
JAMES GORMAN
Manager, Cyanamid Department

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One early season application often controls alligator weed for the entire season. If weed growth is persistent, a second application of Du Pont 2,4-D just before the cane is laid by, keeps the crop free of weeds till fall.

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# THE SUGAR BULLETIN

ered as second-class matter April 13, 1925, at the post office in New Orleans, La., under Act of March 3, 1879.

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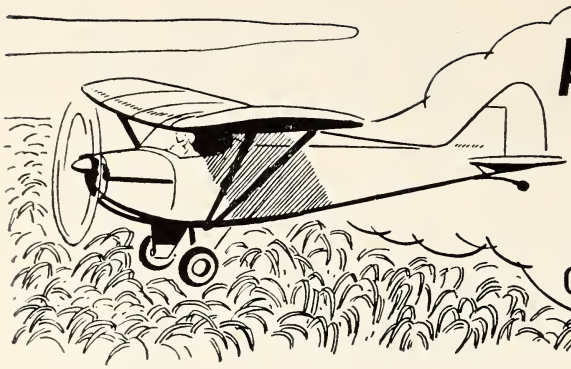

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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

**The Official Organ of the American Sugar Cane League of the U. S. A.**

Issued on the 1st and 15th of each month. Subscription: Members 50 cents a year, Non-members $3.00 a year.

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# IN WASHINGTON WITH C. J. BOURG

At a meeting of the Farm Bureau held in New Iberia on March 11th, there was some discussion of the Sugar Act. Principally, this discussion appeared to center upon the question whether an increase in conditional payments under the Sugar Act could be justified and could be successfully passed.

We assume that the basis of this discussion have been the reports in the Sugar Bulletin that the Appropriations Committee has recognized officially the approximately $12,000,000 surplus paid into the U. S. Treasury from funds collected on the sugar tax, as compared to the total amount of conditional payments made to domestic growers under another Title of the Act.

In order to understand the situation clearly, it should be remembered that the original Amendments to the A. A. Act (known as the Jones-Costigan Sugar Act of 1934) provided for a tax on sugar and also provided for benefit payments to be made on the basis of parity. The Supreme Court, in January of 1936, declared such an arrangement to be unconstitutional as an "unfettered delegation of authority by Congress to the Secretary of Agriculture."

In preparing the Sugar Act of 1937, Congress was very careful to avoid any question of unconstitutionality. It directly and purposely avoided any levying of a tax for the purpose of financing conditional payments to growers. Instead, Congress divided the Sugar Act of 1937 into separate Titles. Under Title 3, it provided for payments to producers based upon conditions as to minimum wages; regulation as to the employment of child labor; the assignment of proportionate shares of acreage; the requirement that processors who are also growers should pay a fair price for sugarcane bought by them; and the application of proper farming practices.

The tax on sugar was covered exclusively under Title 4, which tax was levied and paid directly into the U. S. Treasury. Thus, it became necessary that Congress should appropriate each year the funds necessary to pay conditional payments and to administer the Sugar Act. In planning the Sugar Act of 1948, the same principle was recognized and again put into practice.

With regard to the amount of the conditional payments, it is well to emphasize strongly the fact that payments to sugarcane and sugar beet growers were originaly fixed at 60¢ per 100 pounds of recoverable sugar. This rate continued until December 1941, when it became necessary to extend the Sugar Act, and Congress decided that under the war economy it would be necessary to encourage sugar production. They accordingly fixed a rate of 80¢ per 100 pounds of recoverable sugar, subject to adjustments due to the volume of cane or beets produced.

Frankly, we were somewhat concerned about this rate being continued in the post-war period. We

(Continued on page 214)

# CROP NEWS BY PARISHES

*from*

## *COUNTY AGENTS*

In this issue we include some reports from your friends, the County Agents, about the results of the past grinding campaign that we were unable to carry in the April 1st issue of THE SUGAR BULLETIN, and also some newer reports on the condition of the present crop.

**St. John Parish.** V. O. Calandro, county agent of St. James Parish, reports that the 3 mills in his district ground 304,448 tons of cane in the 1948-49 grinding campaign compared with a grinding of 261,405 tons in the previous season. In 1948 the canes averaged about 20 tons to the acre whereas in 1947 the cane production was only 17.5 tons to the acre.

Sugar production averaged 162 pounds to the ton of cane last year which was an increase of 7 pounds of sugar per ton of cane over the 1947 crop.

St. John Parish will have about 10,000 acres of land in cane for the 1949 crop and this is some 500 acres more than were used for the 1948 production.

We apologize to Mr. Calandro for our error in the March 1st issue of THE SUGAR BULLETIN when we inadvertently stated that the report from his district was sent in by Otis Broussard. Mr. Calandro has been the County Agent of St. John Parish for over nine months.

**St. Charles Parish.** The one mill in St. Charles Parish ground 65,000 tons of cane during the 1948-49 grinding season, according to our report from A. J. Melancon, Jr., who is the County Agent of the Parish. Mr. Melancon says that the canes in his district averaged 18 tons to the acre during the season just completed as compared with an average of only 14 tons to the acre in 1947. The sugar production averaged 150 pounds to the ton of cane and only 135 pounds to the ton in 1947.

About 2,500 acres will be devoted to cane production in St. Charles Parish this year which is about the same as that used for the 1948 crop.

Mr. Melancon's report on the condition of the crop, dated April 8th, states that most of the cane fields in his district have been extremely wet until this week. All cane has been shaved and some off-barred. The stands are fair to excellent. Spring operations have been very slow because of the rainy weather.

**St. Mary Parish.** Nine mills in St. Mary Parish ground 614,565 tons of cane in 1948 and this was an increase of some 90,000 tons over the 1947 grinding. The cane production averaged 17 tons to the acre whereas in 1947 the production was only 14¾ tons to the acre.

The sugar production in 1948 averaged 161 pounds to the ton of cane and in 1947 the sugar production averaged 167 pounds to the ton of cane.

J. P. deGravelles, County Agent, states that the acreage in cane for the 1949 crop is about the same as that of last season when 36,000 acres were used.

Mr. deGravelles has also favored us with a report about the condition of the present cane crop. He states that cultivation in his district is from three to four weeks behind schedule. Stands, however, are good in both the plant and stubble crops although some plant cane is beginning to suffer where no work has been done and winter cover crops and grasses have covered the rows.

(Continued on page 213)

# SECRETARY OF AGRICULTURE REPLIES TO LETTER OF CONGRESSMAN BOGGS

UNITED STATES DEPARTMENT
OF AGRICULTURE
Washington, D. C.
March 22, 1949

Hon. Hale Boggs
House of Representatives

Dear Mr. Boggs:

Your letter* of February 23rd with regard to the position of the Louisiana sugar industry is very much appreciated. We are particularly pleased to have your analysis of the operation of the Sugar Act as it is affecting Louisiana producers.

The concern which you express with respect to the plight of the Louisiana sugar industry is shared by the Department of Agriculture. We are particularly concerned with certain factors which are contributing heavily to the lowered returns which you described. As you know, sugar recovery in Louisiana mills has been declining in recent years. A rather considerable number of mills in Louisiana produced less than 140 pounds of sugar per ton of cane in the past grinding season. It is significant that this total recovery is less than the grower's share of the sugar recovery from a ton of cane in a number of other domestic areas. The average rate of recovery of sugar per ton of cane in Louisiana has declined from 165 pounds in 1941 to about 146 pounds in the 1948 season. Needless to say, this loss contributes substantially to the declining returns of the Louisiana industry.

But the problem does not stop there. Operating costs are increased for the mills and their efficient operation is seriously impaired by the very substantial amount of trash which has been delivered during the past few years with Louisiana sugarcane. This factor, together with the fact that cane is frequently allowed to lie in the fields for a considerable number of days before delivery, contributed significantly to the lower recovery of sugar as well as to the higher operating costs. We think it is pertinent to point out these problems because their solution is equally as important to the Louisiana industry as the price of sugar.

Following the announcement of the 1949 sugar consumption requirement determination, wholesale refined sugar prices advanced 25 cents per 100 pounds. In addition, the spot price of raw sugar, duty paid New York, has recently increased from 5.60 cents to 5.75 cents per pound. However, as you point out, these prices are no longer of major significance to Louisiana producers since most of their 1948-49 crop has been marketed. Nevertheless, we shall continue to watch the price situation very closely and will do everything within our power to carry out the mandates of the Act, viz., that we maintain and protect the domestic sugar industry and that we provide consumers with supplies of sugar at reasonable prices.

With respect to determinations of deficits in the various supplying areas, it is our policy to issue such determinations only when it appears that the area will be unable to fill the quota assigned to it and when the extent of the deficit is reasonably firm. You may be assured of the continuation of this policy.

We shall continue to work closely with you and other representatives of the Louisiana sugar industry in the administration of the Sugar Act and in our efforts to improve the welfare of domestic sugar producers.

Sincerely yours,

"Charles F. Brannan"

* Published in March 15th, 1949 issue of the SUGAR BULLETIN.

# SECRETARY OF AGRICULTURE REPLIES TO LETTER OF CONGRESSMAN WILLIS

UNITED STATES DEPARTMENT
OF AGRICULTURE
Washington, D. C.
April 1, 1949

Honorable Edwin E. Willis
House of Representatives
Dear Mr. Willis:

This is in reply to your letter of March 10, 1949, regarding the situation of the Louisiana sugar industry in relation to minimum wage rates and sugar prices.

We are aware of our dual obligation under the Sugar Act of 1948 to provide sugar to consumers at reasonable prices and to maintain and protect the domestic sugar industry and fully recognize that labor costs are prime considerations to the domestic sugar industry. At present we believe the announced determination of sugar consumption requirements for 1949 amounting to 7,250,000 tons will accomplish the over-all objectives with respect to both the sugar industry and consumer. The Department does, of course, continuously review data with respect to sugar distribution and consumption on the one hand, and conditions in the producing areas on the other hand, and stands ready to revise the consumption requirement determination whenever the over-all situation indicates that such action is necessary.

The Louisiana sugar industry is currently confronted with certain internal problems which are also of primary importance to the industry. During recent years the amount of sugar recovered in Louisiana per ton of sugarcane has declined substantially. In 1941 the average recovery amounted to 165 pounds, whereas in 1948 the amount was only 146 pounds. Based on a raw sugar price of 5.7 cents per pound, this decline has resulted in decreased gross returns of about $1.08 from a ton of sugarcane. This is equivalent to a drop of approximately ¾ cents per pound in the price of sugar. When applied to the total production of sugarcane in Louisiana during the 1948 season, this factor alone reduced the gross receipts of the industry by about $6,000,000. The significance of this factor is emphasized by the fact that recoveries in Louisiana are substantially lower than in any other domestic area.

Another problem is that operating costs of the mills have been increased and the efficiency of their operation seriously impaired by the very large amount of trash which has been delivered with sugarcane during the past few years. This factor, together with the fact that sugarcane is frequently allowed to lie in the fields for a considerable number of days before delivery, contributed to the lower recovery of sugar, as well as to the higher operating costs.

We cite the above facts to illustrate that local conditions, other than labor costs and sugar prices, are important in the Louisiana situation. As you will realize, our actions with respect to sugar requirement determinations, which might have price effect, could be taken only after careful appraisal of the interests of producing and consuming groups as a whole and in accordance with the pertinent provisions of Title II of the Sugar act.

The Department fully recognizes the local problems affecting each producing area in its wage determinations under the Act. These considerations include the current prices for sugar and returns from sugar production in each of the areas, as well as the cost of living. Accordingly, the 1949 determination of minimum time wages for non-harvest and harvest work, respectively, established rates for the lowest

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# JOHNSON GRASS CONTROL

Mr. F. Evans Farwell, Chairman of the Johnson Grass Control Committee of the American Sugar Cane League, has asked that the following letter from Mr. J. M. McLemore, owner of the J. M. McLemore Livestock Commission Market, Inc., be printed in this issue of *The Sugar Bulletin*. The letter was written to Mr. Farwell on April 5th, 1949.

Mr. F. Evans Farwell,
Chairman, Johnson Grass Control Committee
American Sugar Cane League
Whitney Building,
New Orleans, Louisiana

Dear Mr. Farwell:

I have been reading reports of your committee and the *Sugar Bulletin* and have been giving considerable thought to a program that would be best suited to the cane growers for the control of Johnson grass with sheep.

My first thought was to obtain good western ewes with the idea of the cane grower producing good feeder lambs. With the cheap source of black strap molasses, corn, rice polish and cotton seed meal these lambs could be feed out and the grower make a profit from the operation and at the same time control Johnson grass.

I am now convinced that the cane grower is not interested in going into the sheep business at this time and is simply interested in the control of Johnson grass. With this thought in mind, I have purchased all of the sheep of five large sheep producers in Beauregard parish, and have made arrangements for them to winter the same number of sheep for me. I am, therefore, in a position to offer the cane growers sheep during the grazing period. The sheep can be delivered during the months of April, May and June and would be picked up for their winter range during the months of September, October or November. The next spring the same number of sheep that were picked up would be sheared, dipped and wormed and deilvered back to the cane grower at the time he desired them. After talking with Mr. Horace Wilkerson, Junior, his two sons and other people in the cane belt that have wintered sheep, it was my opinion these sheep would winter better in their native high land than they would in the low lands.

I have the following propositions to offer the cane producer interested in Johnson grass control with sheep:

*First:* To sell the sheep outright to the cane grower for $10.00 per head.

*Second:* I will agree to winter the sheep for the wool and $3.00 per head which will include the transportation from the cane field to the winter range and from the winter range back to the cane field, dipping and worming. We will agree to deliver the same number of sheep back after the winter as we picked up. It is my intention to furnish the bucks in order to breed these ewes to lamb in December while they are in the high land range. It is my further intention to keep the old sheep culled out and at any time the cane grower desires to stop using sheep he will have good young ewes to sell which will be worth as much or more than the original purchase price. In other words, after the initial capital of $10.00 per head the cost would run $3.00 per head each year thereafter.

*Third:* Would be on a lease basis, which should interest cane growers who have lots of Johnson grass and would like to have a large number of sheep immediately and are not sure that they would like to continue this meth-

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# SUGARCANE INSECT INVESTIGATION 1948

*A. L. Dugas, C. E. Smith and E. J. Concienne, Department of Entomology, Louisiana Agricultural Experiment Station*

## The Effect of Different Levels of Borer Infestation in Seed Cane Upon Stands and Yield

It is an accepted fact that borer injury is an important contributing factor to bad stands of cane, especially in late plantings or in poorly drained soils. Of course, the variety of cane, weather conditions, etc., determines to a great extent, the degree of influence exhibited by the borer damage.

In the fall of '47 a planting was made of Co. 290, which was selected as to degree of borer injury ranging from no injury to 61 percent or more of the joints bored. The planting date happened to be toward the end of the period under rather dry soil conditions, so that the effects of the borer damage to the seed cane was no doubt more pronounced.

The results of this test were quite interesting and are summarized in the accompanying table. It may be noted that there was a close correlation between degree of borer injury and the stand of cane in April and the number of millable stalks in October. The cane of poor stands made very little growth with short joints and was unhealthy in appearance.

A borer infestation count at harvest time showed no significant differences in various plots, contrary to what might have been expected.

A twenty-five stalk sample was taken for analysis, and the entire three rows of each plot were harvested. The sucrose content ranged from 13.65 percent in the no injury plots down to 11.85 in the plots with seed cane of 61 percent or more of the joint bored. There was a progressive increase in cane and sugar yields from the worst bored seed to the borer free. The borer free seed produced 15 tons of cane per acre, and 29 pounds of sugar per ton more than the worst bored. One of the most significant things about these results is the outstanding effects on seed of only 0 to 15 percent of the joints bored. This degree of injury which actually means an average of slightly more than two joints bored per stalk accounted for a reduction in yield of nearly 8 tons of cane to the acre under the prevailing conditions. That is sufficient evidence to support strong argument for the planting of borer-free cane.

## Control of Third Generation Borers With Cryolite and Other Insecticides

In previous tests to determine the efficacy of controlling third generation borers the results were generally unfavorable. In most instances the cane was already badly

**TABLE 1. Results of the effect of different levels of borer infestation in seed cane upon stand of cane, sucrose content, and yields of cane and sugar—Belleview Plantation, 1948.**

| Seed cane infestation | Stand Count | | Borer infestation Joints bored Harvest-time | Sucrose Content | Yield of cane and sugar | | | Increase over heaviest bored | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Joints bored | 5/3/48 | 10/30/48 | | | Cane per Acre | Sugar per Ton | Sugar per Acre | Cane per Acre | Sugar per Ton | Sugar per Acre |
| | Number | Number | Percent | Percent | Tons | Pounds | Pounds | Tons | Pounds | Pounds |
| 1. No injury | 7,889 | 27,830 | 17 | 13.65 | 26.15 | 189 | 4,942 | 15.25 | 29 | 3,198 |
| 2. 0-15 percent | 4,453 | 22,893 | 23 | 13.18 | 18.38 | 182 | 3,345 | 7.48 | 22 | 1,601 |
| 3. 16-30 percent | 3,533 | 21,490 | 26 | 12.20 | 16.64 | 166 | 2,762 | 5.74 | 6 | 1,018 |
| 4. 31-45 percent | 2,904 | 17,085 | 21 | 12.09 | 13.06 | 165 | 2,155 | 2.16 | 5 | 411 |
| 5. 46-60 percent | 2,081 | 15,391 | 18 | 12.27 | 12.75 | 167 | 2,129 | 1.85 | 7 | 385 |
| 6. 61-over percent | 1,500 | 11,713 | 25 | 11.85 | 10.90 | 160 | 1,744 | ---- | ---- | ---- |
| Differences required for significance, 5% level | 2,695 | 8,711 | 7 | .49 | 9.97 | 9 | 1,726 | 9.97 | 9 | 1,726 |

injured from a heavy second generation attack so that no significant gains resulted from preventing the added injury by third generation borers.

This past year ideal conditions developed for later control since in many fields with practically no second generation damage there developed a heavy third generation infestation. In many instances the cane was stunted from lack of moisture and was therefore more susceptible to the later injury.

A small-plot experiment was conducted in such a field to determine the value of cryolite, Ryania, sodium fluosilicate, and taxaphene for controlling the third generation. The results are presented in Table 1.

The increases in yield of cane and sugar from the different insecticide treatments were comparable to those usually expected from second generation dusting. Ryania was significantly more effective than cryolite or any of the other materials. It resulted in a 3.40 ton increase of cane and a 997 increase in sugar per acre. Although cryolite reduced the borer infestation much below that of the toxaphene, the increases in cane and sugar were about the same. It should be pointed out that the percentage of joints bored following the toxaphene treatments is not a true index of the borer injury, since a larger number of bored joints near the tops of the stalks accounted for a higher percentage. The damage was not proportionally greater due to the location of the bored joints.

These results indicated the need of some third generation control in such fields where conditions of borer infestation and cane growth would justify it. This would be a refinement of the dusting recommendations to take care of late infestations and thereby make the overall dusting program more effective.

## A Study of the Natural Enemies of the Borer in an Effort to Determine Reasons For the Presence of Borer Infestations on Certain Farms and Not On Others.

A study was inaugurated on Camperdown Plantation, near Franklin, to determine the reasons why a borer infestation does not develop on this place. In some years, a sufficient number of first generation borer eggs and leaf signs appear that could develop into a destructive population of borers, but the infestation generally disappears. It was thought that we might find out something about the natural enemies operating on the place through a replicated experiment with various insecticidal treatments, including two which had produced an increase in borers, and two effective ones. An untreated check was also included. The idea was to determine the presence of natural

**TABLE 1. Effectiveness of various insecticides for control of third generation sugarcane borers. Martin Ridge Plantation 1948.**

| Treatment | Borer infestation Joints bored | | Aphids per row-foot | Sucrose Content | Yield of cane and sugar | | | Increase over check | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Summer | Harvest-time | | | Cane per acre | Sugar per ton | Sugar per acre | Cane per acre | Sugar per ton | Sugar per acre |
| | Percent | Percent | Number | Percent | Tons | Pounds | Pounds | Tons | Pounds | Pounds |
| 1. Cryolite, undiluted | 21 | 30 | 6 | 11.64 | 23.42 | 158 | 3,700 | 3.40 | 23 | 997 |
| 2. Ryania, 50 percent | 11 | 18 | 3 | 11.51 | 25.28 | 155 | 3,918 | 5.26 | 20 | 1215 |
| 3. Sodium fluosilicate, 50 per cent | 25 | 34 | 4 | 11.57 | 21.17 | 157 | 3,324 | 1.15 | 22 | 621 |
| 4. Toxaphene, 15 percent | 29 | 34 | 0 | 10.57 | 23.48 | 140 | 3,287 | 3.46 | 5 | 584 |
| 5. Chlordane, 5 percent | 35 | 44 | 0 | 9.89 | 20.87 | 129 | 2,692 | .85 | —6 | —11 |
| 6. Check, no treatment | 32 | 39 | 2 | 10.27 | 20.02 | 135 | 2,703 | --- | --- | --- |
| Differences required for significance, 5% level | 11 | 9 | 6 | .92 | 3.58 | 16 | 647 | 3.58 | 16 | 647 |

enemies of the borer in the set-up and then make regular population counts of such enemies. However, the Argentine ant was the only one found, and the obvious differences in population following the different treatments did not necessitate population counts.

Treatments were commenced April 30 and continued at almost weekly intervals until September 7 except in the intervals between egg laying for the different generations.

It may be noted from a summary of the results in Table 1 that through the use of chlordane applications the borer infestation was increased to 55 percent of the joints bored on this place which ordinarily shows an average of about 7 percent. It is evident that the infestation in the check plots in the experiment amounted to 32 percent, but this was no doubt a result of the influx of borers from the build-up in the chlordane and parathion plots. A tremendous difference in the Argentine ant populations was the only predatory population difference observed. That ranged from nothing in the chlordane plots to literally millions in the other plots, except the parathion, which held them down somewhat but nothing like the chlordane.

The 55 percent of joints bored in the chlordane plots resulted in a 6 ton loss of cane per acre and a 41 and 1716 pounds loss of sugar per ton an acre respectively.

## An Effort to Control Borers and Red Rot Diseases Through the Use of Cryolite and Parzate Applications.

Tests were inaugurated in 1948, in cooperation with the Plant Pathology Department, to determine the value of the control of borers and red rot disease in seed cane through the application of cryolite and parzate. A sufficient acreage of Co. 290 seed cane was dusted to furnish seed for making an early and late planting in both light and heavy soil. The treatments used were as follows:

1. Cryolite, alone—for obtaining borer free cane.
2. Cryolite & parzate—for obtaining borer and red rot free cane.
3. Parzate alone—for obtaining red rot free cane.
4. Chlordane—for obtaining heavily bored cane plus red rot.
5. Check, untreated—for obtaining regular field cane.

Cane from each of the above dusted areas was included in the two randomized plantings in the two types of soil. Stand counts and yield records will be obtained in the four plantings in '49. A preliminary stand count was made in January, but at this time germination was so light that the figures are probably not representative of the true circumstances.

**TABLE 1. Results of different insecticidal treatments upon the natural enemies of the borer and the resulting losses in yield of cane and sugar. Camperdown Plantation, 1948.**

| Treatment | Borer infestation Joints bored | | Aphids per row-foot | Sucrose Content | Yield of cane and sugar | | | Increase over check | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Summer | Harvest-time | | | Cane per acre | Sugar per ton | Sugar per acre | Cane per acre | Sugar per ton | Sugar per acre |
| | Percent | Percent | Number | Percent | Tons | Pounds | Pounds | Tons | Pounds | Pounds |
| 1. Cryolite, undiluted | 4 | 18 | 8 | 12.73 | 27.19 | 175 | 4,758 | 1.00 | 27 | 882 |
| 2. Ryania, 50 percent | 4 | 22 | 1 | 12.27 | 28.63 | 167 | 4,781 | 2.44 | 19 | 905 |
| 3. Parathion, 5 percent | 22 | 37 | 0 | 11.77 | 25.51 | 161 | 4,107 | —.68 | 13 | 231 |
| 4. Chlordane, 5 percent | 42 | 55 | 0 | 8.40 | 20.19 | 107 | 2,160 | —6.00 | —41 | —1716 |
| 5. Check, no treatment | 19 | 32 | 1 | 11.02 | 26.19 | 148 | 3,876 | | | |
| Differences required for significance, 5% level | 10 | 7 | 5.3 | 1.81 | .99 | 30 | 256 | .99 | 30 | 256 |

# 1949 SUGAR BEET WAGES

The U. S. Department of Agriculture recently announced "fair and reasonable" wage rates to be paid for work on the 1949 crop of sugar beets in States other than California by producers who apply for payments under the Sugar Act of 1948. The wage determination for work on the 1949 crop of California sugar beets was issued January 12, 1949.

The 1949 wage determination continues, with certain modifications, the general level of wages specified for the 1948 crop. Also, it continues the provision that the employer must furnish to the laborer, without charge, the perquisites customarily furnished by him such as a house, garden plot, and similar items, in addition to the specified wage rates.

The basic time rate for contract labor thinning, hoeing, and weeding sugar beets is 60 cents per hour, and for pulling, topping, and loading, 65 cents per hour. Piecework rates, under which most field work is performed, are designed to result in hourly earnings ranging from 70 to 90 cents per hour for average workers.

The basic piecework rates for thinning, hoeing, and weeding remain unchanged from 1948 but the rates per ton for harvesting have been reduced somewhat at the lower yields, while they remain about the same as 1948 at average yields, and are increased slightly at the higher yields. Department officials stated: "These adjustments should more closely align the wage rates to the normal pattern of work performance, whereby output in the pulling, topping, and loading of sugar beets increases progressively with yield." The new scales vary with wage districts and range from $1.25 per ton for a yield of 20 tons or more per acre for "pull and top" in one wage district to $2.45 per ton for a yield of 4 tons per acre for "pull, top and load" in another wage district.

The determination also provides, as in former years, that for any work in the production, cultivation, or harvesting of sugar beets for which a rate is not specified, the rate shall be as agreed upon between the producer and laborer.

—o—

## JOHNSON GRASS

(Continued from page 208)

od. I would lease these sheep to the cane grower for $5.00 per head for the season. The cane grower would be responsible to the extent of $10.00 per head for any sheep while in his possession.

I would also like to point out that some of the cane growers are herding their sheep satisfactory in using small corrals at night. Mr. Thibeaux and Mr. Churchill of Donaldsonville both tell me that they are handling their sheep in this manner very satisfactorily.

However, sheep are being shipped out of this territory to Montana, Missouri and Tennessee. We do not have a sufficient number of sheep in Louisiana to begin to take care of the cane belt and when you go outside of the state of Louisiana the cost will be prohibitive. Those interested should contact me immediately.

If I can be of any further service to you and your committee, please feel free to call on me.

Kindest personal regards.

Yours very truly,

/s/ James M. McLemore

—o—

## Official Season's Average Price for Blackstrap and Molasses

The official Government Season's Average price of Louisiana Blackstrap Molasses was released by the Production & Marketing Administration on April 5th. The Government price are as follows:

Louisiana Blackstrap Molasses 9.6998 cents a gallon.

Molasses Bonus 5.524 cents per actual ton of cane.

## CONGRESSMAN WILLIS

(Continued from page 207)

types of work at 32 and 39 cents per hour for Louisiana, against 45 cents for Florida, 60 and 65 cents for the beet area, and 78.5 cents for Hawaii. Only the Puerto Rican rates of 31 and 34 cents per hour and the Virgin Islands rate of 25 cents per hour are lower than those for Louisiana. To these rates there must, of course, be added the value of the usual perquisities. Thus, area differences are given full consideration in our determinations of farm wages. On the other hand, factory wages present a somewhat different problem under the circumstances set forth in your letter. It is true, of course, that any increase in factory labor rates required by the pending legislation under consideration could be offset by an increase in the price of sugar. However, as we have pointed out, any action by the Department which would affect prices could not be based on conditions prevailing primarily in one of the domestic sugar areas. Such actions would have to be based on an appraisal of the status of the entire domestic industry, along with the supply and price situation affecting domestic consumers.

We appreciate your views on this matter. We want to assure you that the Department of Agriculture will continue to cooperate with the Louisiana sugar industry with a view to finding solutions to its problems.

Sincerely yours,

"Charles F. Brannan"

Secretary

Published in March 15th, 1949 issue of the SUGAR BULLETIN.

**SHEEP FOR SALE**

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## CROP NEWS

(Continued from page 205)

Mr. deGravelles believes, however, that there should be very little damage to the crop if it is possible to clean the fields within the next two weeks.

Practically no corn had been planted in St. Mary Parish when Mr. deGravelles sent in his report.

**Lafourche Parish.** C. J. Arceneaux, County Agent of Lafourche Parish, advised us on April 8th that excessive rains in his district had delayed cultivation about one month and that only a very small percentage of the canes had been fertilized. Off-barring and shaving operations are also considerably behind schedule.

Mr. Arceneaux states that the canes have registered very little growth as yet, due to the continued cool weather, but, he states, "very promising good stands seem to be there".

**Iberia Parish.** Reporting on April 9th from New Iberia, W. E. Williams, County Agent of Iberia Parish, states that the canes, both plant and stubble, have come up to a fair to good stand in most sections of his Parish. In spite of the fact that farmers have not been able to cultivate the canes properly both the plant and stubble crops are growing. "With the advent of good weather in the past few days," Mr. Williams states, "the farmers are just beginning to get into the fields. Three weeks of good weather would give them an opportunity to get their crop in good condition. If then we had a good season the remainder of the year crops would turn out fair to good."

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## IN WASHINGTON

(Continued from page 204)

offered the suggestion that the 80¢ rate should be made permanent and no member of Congress rose on the floor to challenge that rate.

We should be very careful to prevent a situation wherein the tax and the conditional payments are so merged that the reverse of the present situation might be brought about. It isn't impossible to imagine that our present favorable position of having a surplus could very well develop into the unfavorable position of having a deficit. Then, our status would be reversed and no one can foretell what the attitude of the Appropriations Committee or of Congress might be towards the producers or towards the Sugar Act itself.

It is well to look at the Sugar Act realistically. Definitely no one can look at the Sugar Act exclusively from behind his fence on a Louisiana farm. There are considerations which must be weighed from the standpoint of each area and particularly from the standpoint of the Seaboard refiners. Likewise, we cannot avoid the fact that the Cubans look upon this tax as an import tax against them in lieu of or as a substitute for the tariff. Without discussing this feature, at length, it should suffice to say that when we attempted and succeeded in getting all domestic areas to acquiesce in the general provisions of the Sugar Act, and when we succeeded in getting the Secretary of Agriculture, as well as the Secretary of State and the Secretary of the Interior, to support the Act in its entirety, we accomplished what was considered a "legislative miracle" in Congress.

Our friends in Congress are well agreed that the Sugar Act should not be re-opened for any change or amendment, except one of major importance. They believe that efforts would be made by persons unfriendly to the sugar industry to bring changes which would be


# ATLACIDE

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harmful to us. They believe that we have the best Sugar Act obtainable and that we might run the chance of losing some very desirable provisions if the matter should be thrown open for consideration within the next four years.

Of course, the Legislative Committee of the American Sugar Cane League is the body which receives and considers and acts upon all matters concerned with legislation in Washington. Your Washington Representative is subject to the instructions of this Committee and always abides by its decision. He would be delighted, if it is found to be advisable, to have this or any matter concerning the Sugar Act submitted to the Legislative Committee. He is always glad to participate with other members of the League in a full and free discussion of this whole subject. The decision of the Legislative Committee will, as always, determine the best policy of the American Sugar Cane League for the Louisiana sugar industry.

We recommend using every possible effort or means to obtain a full carrying-out of Section 201 of the Sugar Act. We must remember that putting the Sugar Act into full effect is a considerable operation, affecting 7 separate domestic areas and all foreign areas. It does not simply mean taking care of Louisiana!

Next, we must become more efficient. That is a definite *must!*

We must lick the trash problem; grower and processor too.

We must adjust all methods and practices to be able to withstand the lower prices which must eventually come to all American farm products.

We must increase the *efficiency* of our farm equipment and of our processing plants.

We must *reduce costs* at all points.

We cannot sit back and say that the Government *shall* take care of us with higher prices and larger conditional payments. We are still Americans who believe in the free enterprise system; we don't want our industry nationalized or socialized!

Farmers must *deliver fresh cane* as soon after cutting as is possible under existing weather conditions.

We must put our own house in first-class order and at maximum efficiency. Then we will merit, and receive, the protection of the Sugar Act as Congress intended.

The Secretary of Agriculture is a fair and helpful Administrator of the Act. We must meet him halfway and the result will make the job easier of maintaining and protecting the welfare of our industry and of all consumers of sugar.


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# THE SUGAR BULLETIN

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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

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# THE CANE TRASH PROBLEM
## A POSSIBLE SOLUTION

*Arthur G. Keller, Professor, Department of Chemical Engineering, Louisiana State University*

The 1948 crop was the second largest in the history of Louisiana in point of tons of cane ground. It was also notable in that the yield of sugar in pounds per ton of cane handled was the lowest in our recent history. Low sugar yields plus drastic declines in the price of final molasses were responsible for the premature closing of at least 6 mills, four of which have no present intention of resuming operations in the future. It would appear from this that a study is in order to determine, if possible, what has happened, why it has happened and what can be done about it. It will be the purpose of this paper to consider these questions in the order listed.

That yields are dropping is amply supported by the state average production figures which are compiled each year by the Sugar Branch, Production and Marketing Administration, United States Department of Agriculture. In Table I below data are submitted covering the period 1938 through 1948.

**Table I**
**Comparison of Actual vs Theoretical Sugar Yields**

| Crop Year | Actual Yield on Gross Cane 96° Sugar, Lbs./T. Cane | Normal Juice % Sucrose | Theo. Yield* corresponding to Normal Juice Sucrose 96° Sugar/Lbs./ T. Cane |
|---|---|---|---|
| 1938 | 168.96 | 12.50 | 168.70 |
| 1939 | 173.68 | 12.63 | 170.80 |
| 1940 | 161.98 | 11.93 | 159.60 |
| 1941 | 165.28 | 12.14 | 162.90 |
| 1942 | 171.44 | 12.70 | 171.90 |
| 1943 | 164.06 | 12.39 | 166.90 |
| 1944 | 152.50 | 11.93 | 159.60 |
| 1945 | 151.37 | 11.86 | 158.50 |
| 1946 | 155.95 | 12.31 | 165.70 |
| 1947 | 149.10 | 12.33 | 166.00 |
| 1948 | 146.80 | 11.91 | 159.30 |

* From the Commercially Recoverable Sugar Table used by the Sugar Branch in calculating benefit payments to cane growers.

This information is not new, having been presented on numerous previous occasions to industry groups. It is factual and it is timely. Particularly pertinent is the fact that the decline in yield of sugar and the discrepancy between actual and theoretical yield of sugar dates only from 1943 and that it continues to increase. In another study[1], John Seip and the writer have considered this subject at length.

The financial returns to the mills in the state generally have, over the long range, been low but have been on the credit side of the ledger. Prior to World War II sugar and molasses prices were at disastrously low levels, around three cents for sugar and six cents for molasses. During this period, however, sugar yields were high comparatively speaking and labor costs were low. With the war and its attendant inflation, costs and prices rose, but generally factories enjoyed a prosperous era because of abnormally high molasses prices and a ready market for their produce. The drop in yield of sugar and the upward spiral in operating costs did not cause undue alarm because high molasses prices and income to a great extent offset these factors.

It was realized by every person who gave any serious consideration to the matter that mechanization of our harvest and the many bad practices that developed through its abuse, such as excessive trash and stale cane, were contributory causes to poor yields and high costs. The generally prosperous condition of the mills created an impression that maybe such material could be processed profitably in spite of it.

The profits generally were not high and that they dropped while costs rose will be evident from an inspection of Table II. Both costs and returns are subject to many influences in addition to product prices and yields of sugar. Weather,

(Continued on page 224)

# IN WASHINGTON WITH C. J. BOURG

*This Statement Was Submitted On Behalf of The American Sugar Cane League of New Orleans, Louisiana by President Murphy J. Foster on May 20, 1949, to The Honorable Claude Pepper, Chairman, Subcommittee of The Senate Committee on Labor and Public Welfare.*

My name is Murphy J. Foster, Jr., President of the American Sugar Cane League, an organization representing the Louisiana Sugar Industry, 11,000 of whose growers and processors are members of the League in good standing.

I want to present to this Honorable Committee a statement prepared by Dr. J. Norman Efferson, a recognized economist and statistician of standing in Louisiana agriculture, who is also a member of the faculty of Louisiana State University. Dr. Efferson has been recognized by the U. S. Department of Agriculture with regard to statistics on costs of production in the Louisiana Sugar Industry for many years. The Department has likewise recognized Dr. Efferson with respect to statistics on cost of production in both the Rice Industry and the Dairy Industry of Louisiana. Dr. Efferson has recently completed a study of rice production throughout the world, having made a world-wide tour of the Pacific, Asia and Africa. He is presently studying for the Department of Agriculture the conditions of production, cultivation and marketing in all countries in South America which produce and distribute rice. It is for this reason only that he is not personally appearing before you today in support of his statement, 75 copies of which have been delivered to this Honorable Committee, as required.

I appear in person as the President of the American Sugar Cane League, and in my individual capacity as the President of The Maryland Company, Inc., which Company has been producing an average of 12,000 tons of sugarcane and whose factory has been grinding an average of 42,000 tons of sugarcane and made approximately 5,800,000 pounds (2900 tons) of raw sugar. On this sugar factory, extensive repairs, amounting to more than $150,000, were made before the 1947 grinding season, making it as modern a mill as possible, and even with these extensive repairs, after the grinding seasons of 1947 and 1948, which years showed a loss in money on our operations, our Board of Directors decided to sell our Factory to a sugar company in Uruguay, which sale has now been completed, and delivery of the factory is now being made. We have decided to continue to operate the sugar plantation and to sell the sugarcane to another nearby factory.

Mr. Chairman, the situation with The Maryland Factory is not at all an isolated case. In the most recent years, the Louisiana Sugar Industry has suffered the loss of 13 factories, which have been forced to close because of losses sustained.

We submit this fact as prima facie evidence that the production in Louisiana has not been profitable

(Continued on page 222)

# A LETTER FROM MR. C. A. DUPLANTIS, JR.

Mr. C. A. Duplantis, Jr., of the Sunrise Planting Corporation, Franklin, La., who is a grower member of the Louisiana Grower-Processor Committee, has requested that the following letter be printed in THE SUGAR BULLETIN:

March 21, 1949

Mr. Marcelle J. Voorhies
Editor of the Sugar Bulletin
New Orleans, La.

Dear Mr. Voorhies:

I am setting down in so many words the solution of the difficult problem which faces the Louisiana Sugar Cane Industry.

The solution rests in giving the grower participation in all aspects of the job and in the profits from savings brought about by the grower himself.

By allowing the grower to share in the profits brought about by his direct participation in all aspects of the job, there would be created a sense of team spirit. This team spirit will accomplish what the millman at the top cannot hope to accomplish.

I suggest that grower shares be issued, the grower shares to be non-negotiable, but so long as a grower held them, they would assure him participation in the conduct of the business and in profits derived from increased efficiency.

These suggestions are not original with me but are an amplification of the Scanlon plan known to industry.

The application of the Scanlon plan to the Adamson Company of East Palestine, Ohio resulted in a tremendous increase in profits for the company and bonuses for the employees, ranging from 50% to 80% of their total earnings. In its application at the La Point Machine Tool Company of Hudson. Mass. the plan has resulted in an increase in profits together with 19% bonus for all employees.

The essence of the plan is to give the growers real participation both in suggesting and in carrying out schemes for increased efficiency. The grower will develop a new sense of usefulness. Since he is in constant touch with the millman and his problems, the grower will acquire a sense of security, and when bad times strike, he will feel he is being given a fighting chance, which is the main thing an American farmer wants.

This is fundamental ethics—the ethics we all believe in. The grower is not demanding security; he wants to escape the frustration of not being able to participate in the fight. This is sound economically, psychologically, philosophically, ethically, and religiously on all counts.

The suggestion boxes should be made of syrup barrels if this plan is adopted by the industry.

Respectfully submitted,
C. A. DUPLANTIS, JR.
Member of Grower
Processor Committee

P.S.—I challenge the squires of the Louisiana Sugar Industry to take their leave knowing we again have an efficient and economically sound enterprise.

C. A. D., Jr.

———o———

## FOSTER STATEMENT

(Continued from page 221)

in the most recent years, and that the outlook for the future is not at all reassuring. This is particularly true because of the constant threat of increased costs, contained in such legislation as the Amendments to Section 6 and Section 7, particularly Section 7 (c) being eliminated from the Fair Labor Standards Act, as proposed in S. 653 presently under consideration by this Honorable Committee.

When these factories close, it means that the small farmers in the

vicinity of the factory districts will have no market to which to deliver their sugarcane, without greatly increased costs. When this happens, it means that sugarcane production has to be reduced unless new factories are built to receive the cane, which is not now in prospect.

The States of Louisiana and Florida are the only States in the U. S. which do or can produce sugarcane-for-sugar. It has been decisively proven that in times of war, the sugar produced on the Mainland is the only sugar which is guaranteed for delivery to American consumers. In the last World War, the submarines kept Cuban and Puerto Rican sugar away from our shores in 1941 and 1942. A part of the normal Hawaiian supplies was kept from American shores throughout the war. Philippines were completely blocked off by the Japs during the war and they have far from recovered their normal production as late as today.

The importance and necessity of maintaining a domestic sugar industry on the Mainland is definitely an integral part of our national defense program. At the present time, the Mainland areas do not produce more than one-third of the sugar needed by American consumers.

I should like the indulgence of this Committee to permit me to file for the record, a statement prepared by Mr. M. V. Yarbrough, Manager of Young's Industries, Youngsville, Louisiana, who grow and process sugarcane into raw sugar.

—o—

# THE MARKETS

(*April 27th*, 1949)

The price of Louisiana blackstrap molasses advanced a half a cent a gallon on April 13th when a small lot sold to a local dealer at 6 cents in bulk f.o.b. plantation. Since that time, however, no new transactions have been recorded and there are no new developments to be reported as we go to press.

## Sugar Comment Published by Meimrath Brokerage Co. on April 21, 1949

At the moment the sugar market would seem to be distinctly qualified by these three factors:

1: The pressure of marketing the Cuban and Puerto Rican crops.

2: The indication that primary distribution in the United States will exceed 2.2 Million Tons during the June-July-August period of 1949.

3: The U. S. Government's attitude toward the price of sugar, and Secretary of Agriculture Brannan's consequent use of a low consumption estimate: 7,250,000 Tons.

**Factor 1:** During the month of April, and for the first few weeks of May especially, many Cuban and Puerto Rican sellers respond to that seasonal factor known as "the pressure of the crop." These sellers, in other words, are obliged to move a certain percentage of their production at prices then obtainable, if they are to overcome warehousing and financing difficulties. Last year, for example, this phenomenon was reflected in the fact that the duty-paid spot price of raw sugar declined forty points from April 8th to May 12th—or from 5.40 to 5c a pound. Later in May, however, and during June and July when "crop pressure" was no longer a factor, the spot price rose steadily and strongly to 5.78c.

**Factor 2:** There have been two post-rationing summers, two periods of tremendous warm-weather distribution. During the months of June-July-August of 1947 more than 2.5 Million Tons of sugar were delivered by the nation's primary distributors' and during the same months of 1948 more than 2.6 Million Tons were distributed. And as for this summer—giving full weight to the present statistical indications, 2.2 Million Tons would seem to be on the conservative side. This figure is, nevertheless, an im-

pressive one: in terms of a weekly average, it comes to 170,000 Tons, or 40,000 Tons above the weekly to-date average of 1949.

**Factor 3:** Never by official proclamation, but certainly by implication, the Department of Agriculture has indicated that it shall attempt to achieve the specific price objective outlined in the Sugar Act of 1948. It is the Government's intention, as the trade interprets it, that refined sugar shall sell at a price of near 8.40c a pound. A low quota of 7,250,000 Tons has been set with such a price in mind, and it appears most probable that this quota shall be continued without increase or reallocation until 8.40c (or something very near it) has been attained.

For several months these three factors have been fostering a "tug of war" atmosphere in the raw sugar market. A month or so from now, however, when the "crop pressure" factor ceases to exist, and becomes, as it were, forceful by its absence—the stage will be set for an effective and striking use of the present quotas. At that time a great summer distribution will be in the offing. The Secretary of Agriculture can then force the issue by maintaining the low consumption estimate of 7,250,000 Tons—until the higher price level called for by the Sugar Act of 1948 has been established.

—o—

## CROP NEWS BY PARISHES

**Assumption Parish.** Reporting from Napoleonville on April 13th, E. J. Lousteau, County Agent of Assumption Parish had the following to say regarding the cane crop in his district. "A great majority of the sugarcane growers I have spoken to recently are well pleased with their stand of cane. If the weather permits they are expecting a normal crop for this coming season."

**Point Coupee Parish.** In answer to our inquiry regarding the condition of the new crop A. P. Curet, County Agent of Pointe Coupee Parish, reported on April 8th that the cane crop throughout his district apparently had not been injured by the prolonged spell of adverse weather. "With good weather and other favorable conditions from here on we can make a normal crop," Mr. Curet reported.

**West Baton Rouge Parish.** "The sugarcane crop is very promising at this time," O. E. Camus, County Agent of West Baton Rouge Parish, reported on April 11th. "Due to continuous and excessive rains the work on the plantations is about four weeks late. However, the plant cane in most cases is up to a perfect stand and the stubble crop is up to a very good stand and the prospect at this time appears to be better than last year, with the cane growth about two weeks ahead of last year at this time. In many cases it is noted that the lower eyes of the stubble that did not germinate early may be destroyed but most fields have sufficient cane up at this time to give a good yield providing we have favorable weather during the year."

"One encouraging factor is that the farmers have plenty equipment in good shape and if they can get a few weeks of good weather they can have the crop up to date."

—o—

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## TRASH PROBLEM

(Continued from page 220)

the size of crop and other uncontrollable factors enter the picture. It can be said, however, that since 1939 costs generally have increased 250 to 300% while the general trend in earnings has been downward since 1944. The data in Table II

are taken from the studies conducted over the past twelve years by the Department of Agricultural Economics, Agricultural Experiment Station, L. S. U., which have appeared from time to time generally titled[2] "Financial Results of the Operation of Raw Sugar Mills in Louisiana." There is presented, too, comparable data from a group of mills which includes both raw and direct consumption producers. This group employs uniform accounting procedures and has processed on the average of 12% of the cane ground in the state each year. All returns are after interest and depreciation, but before income tax.

**Table II**
**Costs and Returns on One Ton of Cane**
**Basis One Ton of Cane Ground**

| Crop Year | L. S. U. Cost Studies Mills | | Selected Group | |
|---|---|---|---|---|
| | Manufacture | Net Income | Manufacture | Net Income |
| 1939 | $0.92 | $0.32 | $0.74 | $0.40 |
| 1940 | 1.24 | .35* | 0.84 | .12* |
| 1941 | 1.10 | .70 | 0.79 | .94 |
| 1942 | 1.14 | .57 | 0.89 | 1.03 |
| 1943 | 1.31 | .45 | 1.05 | 1.07 |
| 1944 | 1.48 | .13* | 1.29 | .41 |
| 1945 | 1.46 | .31 | 1.28 | .96 |
| 1946 | 1.74 | .75 | 1.82 | 1.08 |
| 1947 | 2.20 | .13 | 2.06 | .57 |

* Very poor crop.

Considering these facts, the question arises as to what can be done to correct the situation. Prices of products and labor are beyond the control of the local industry. The industry either lives with those that prevail or goes out of business. The study of Seip and Keller[1] already mentioned indicates that factories today are better equipped than they were ten years ago. This leaves open only two avenues of approach, management and cane supply. That top management in the industry (and by that is meant principally owner - management) has been derelict in its duties is apparent to anyone who has observed the general complacence and even encouragement by management of the delivery of cane to the mills without regard to condition, *i.e.*, freedom from trash and freshness. With each year's unfavorable financial results there is a general tendency to blame the *'cane grower'* for the predicament of the mills. This raises the question as to just who is this 'cane grower'?

The records compiled by the Sugar Branch indicate that 43% of the cane milled in Louisiana during 1946 and 1947 was produced by the same interests which owned and operated the sugar mills of the state.

Quite a large tonnage of cane reported as non-administration cane is produced by growers who are part owners of a mill corporation, so that actually a considerably larger percentage than reported is administration owned cane. It follows then that 'management' and the 'cane grower' are one and the same for all practical purposes and hence the problem should be readily solved.

For many years it has been accepted as axiomatic in the cane sugar industry that the following conditions are necessary for best results in the factory:

1. Cane must be mature.
2. "All cane must be reasonably free from shucks or trash and must be sound, unfrozen and merchantable, and cut to the reasonable satisfaction of the processor. The cane must be cut in the top ripe joint unless and until there is a freeze, after which knives must be lowered as to remove all sour or acid joints."[2]
3. It must be freshly cut.

As a result of the labor shortage and higher wages which followed the war, the industry, through necessity, relaxed many of the sound practices built up over many years, and permitted the delivery of cane containing trash, shucks, tops and soil. Improperly topped cane came, too, and soon after, stale cane. Who permitted this procession of malpractices which has brought our industry to its present plight? The factory owner-cane grower. And why, in the face of all of the knowledge built up over many years, were such practices tolerated? First came

necessity, it was either accept poorly harvested cane or not receive cane. Labor was scarce and is still not abundant. Then another factor came into play. It was apparently profitable to process such cane, especially when most of the non-administration cane was still reasonably close to prewar standards. There was the matter of benefit and incentive payments to growers by the Government which during the war years totalled some $2.50 per ton of standard cane delivered. If administration cane deliveries contained 10% trash, and the shipment still tested par, $2.50 per ton was a very handsome price for otherwise trash and tops.

During this period management had the full right to test and make deductions from cane deliveries of all trash in excess of three per cent on gross cane. Some few courageous mill owners actually make such deductions. Most mills, however, discussed the trash deduction question at great length and professed eagerness to make deductions but shied away from any concrete action. The reason usually given was that in competition for cane they could not afford to antagonize their growers by deductions, because, if they did, their neighbor down the way (who didn't make deductions), would snap them up. It was during this time, too, that the move arose to have trash deductions declared mandatory by the Sugar Branch and thus remove the onus from the mill owner. In 1947 the industry through the Grower-Processor Committee recommended, in a public hearing held at Thibodaux, that the Secretary of Agriculture declare trash deductions permissible. The meeting was hardly over before other members of the industry were asking that this recommendation be ignored and conditions be left in status quo. Trash deductions were made by most mills in 1947. During the 1948 crop all mills were required to test all cane shipments and make appropriate trash deductions. Some idea of how much trash has cost the industry in recent years may be obtained from Table III.

**Table III**
**Trash Data on Louisiana Factories**

| Item | Crop Year | | | |
|---|---|---|---|---|
| | 1945 | 1946 | 1947 | 1948 |
| Excess Trash in Cane, tons | *49,660 | *73,841 | 128,864 | 202,993 |
| Normal (3%) Trash in Cane, tons | 154,477 | 134,515 | 121,379 | 163,789 |
| Total Trash in Cane, Tons | 204,137 | 208,356 | 250,244 | 366,782 |
| Total Trash in Cane, % | 3.8% | 4.6% | 6.2% | 6.7% |
| Mill Value of Trash Deducted | $207,926 | $466,380 | $902,200 | $1,174,720 |
| Mill Value of Normal Trash | $467,952 | $849,597 | $849,653 | $947,847 |
| Total Mill Value of Trash | $675,878 | $1,315,977 | $1,751,933 | $2,122,567 |

* Estimates based on reports from mills which made deductions.

These data are misleading in that they indicate only the cost to the mills in the form of overpayments to growers for material received which was not sugar cane. They fail to cover the loss in yield, in capacity and in accelerated wear on equipment which is the result of handling this trash. With these costs included, a conservative guess would be that the costs shown would be at least doubled.

The grower as such has enjoyed certain cash benefits from this trash, in addition to the money values indicated in the next to the last line in Table III, there are the Sugar Act Payments he has received on the normal (3%) trash and on any trash in excess of 3% which the mill through accident or intention failed to note and deduct. The value of these payments on nor-

**Table IV**
**Benefit Payments on Normal Trash**

| Item | Crop | | | |
|---|---|---|---|---|
| | 1945 | 1946 | 1947 | 1948 |
| Sugar Act Payments on Normal Trash (3%) | $185,372.40* | $161,418.00 | $145,654.80 | $196,458.80 |

* Estimates based on data from those mills which made trash tests and deductions.

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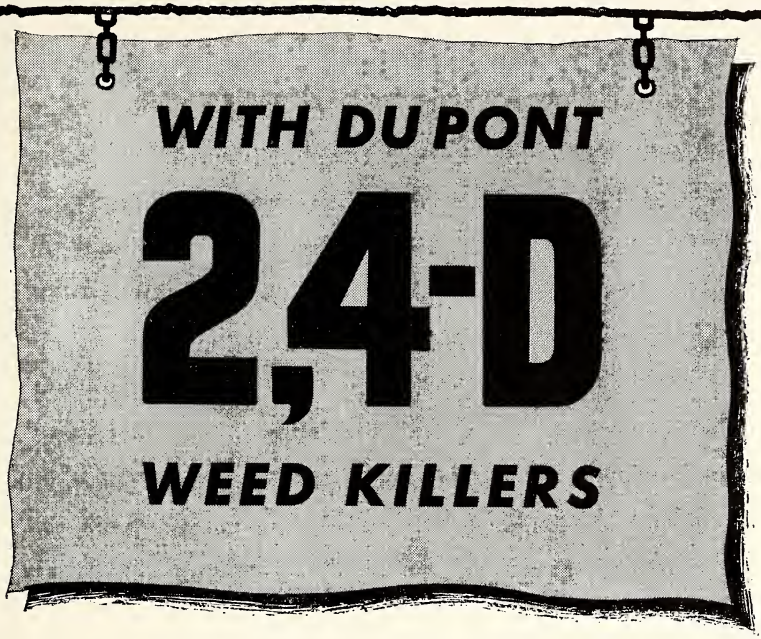


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mal cane for the period covered in Table III are presented in Table IV.

For a grower who delivers 10,000 tons of actually clean cane per crop, the benefit payment on the 3% trash which is allowed would amount to $370.80, hardly enough to justify ruining the mill which is the only market for his product.

In view of the data just presented, it may well be asked why the milling segment of the industry took no concrete steps to eliminate these losses. A glance at Table II indicates that profit-wise 1945 and 1946, in particular, were very favorable years for the mills because of high molasses prices. In the face of such profits, the urge and need for action was eliminated. The idea persisted that a way could be devised to clean cane at the factory cheaply and that meanwhile the mills could struggle along until this materialized. The grower segment of the industry, and this includes many mill owners, developed the idea that better mills, more clarifiers and other equipment might make it possible to get sugar where this had not been previously possible. There was also the idea that 'research' might accomplish the impossible task of recovering sugar from cane tops which contain little or no sugar and from soil and trash which contain none at all. 'Research', too, would find a way to clarify and successfully process the juices from stale cane. While it is true that 'research' has accomplished many seeming miracles, it has not and cannot do the impossible. Innumerable articles have appeared over the past thirty years which show the rate of deterioration of cane after cutting and the loss in recoverable sugar which accompanies this deterioration. The attention of the industry has also been directed to the loss in capacity of milling plants which accompanies an increase in fiber content of the cane. Unfortunately for the industry, it has not been possible to pin down to a definite figure the actual yield loss the factory suffers because of trash. This is largely because stale cane, even when clean, can cause losses as great as trash or greater. The decline in yield indicated in Table I is without doubt the combined result of trash and stale cane.

The problems which face the industry are not insurmountable. They can be solved without the investment of large sums of money. Their solution will require the expenditure of energy, both mental and physical. The solution involves several major phases. First, fresh cane must be received at the mills and must be ground fresh. Second, cane must be delivered as free of trash as possible and properly topped. Third, harvest and grinding operations must be coordinated by mill management to prevent deterioration of cane after cutting.

Concerning the value of fresh cane at the mill, it is only necessary to state the fact that the mills in Louisiana which recovered more than 160 lbs. of sugar per ton of cane in 1945 are mills whose managements have actively followed the first recommendations.

Cane will not be properly topped and cleaned so long as the grower finds it more profitable to do otherwise. The present par bracket system on sucrose and the systems of premiums and discounts used in the current Cane Purchase Contract place a premium on poor topping and trash. The bracket of say 11.5% to 12.0% should be replaced by a single point, say 11.75%. Premiums and discounts should be the same. There should be no allowance of 3% for 'normal' trash. The present 9.5% sucrose below which cane has

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Cane deliveries during wet weather frequently contain excessive amounts of soil. Some of this is the result of poor supervision of harvester operation; much of it is picked up by improper operation of mechanical loaders; a third and serious source is mud, gravel and shells thrown into the cane loads by the wheels of the truck or tractor as the load is moved from field to factory. Present sampling procedures fail to account for much of this material. Mills should be required to install mechanical grabs for removing samples, (100-200 lbs.), from cane loads. Mechanical sampling devices are not expensive and do get a much more representative sample than is now obtained by hand sampling procedures. All trucks, tractors and cane carts should be provided with some type of mud-guard to keep highway rocks and shells out of cane delivered at the plants.

There is apparent in many factories a lack of information on the day to day and hour to hour harvesting operations of the factory's many shippers. When cane was harvested by hand time was not such a vital factor, since the rate of which a crop was harvested was pretty well determined by the available labor supply. Today, with a single mechanical harvester able to replace 30 to 50 men and with over 300 harvesters in operation, a small grower can have his entire crop cut in a single day and sometimes does. The mill should have an energetic and able man on the job constantly coordinating the efforts of field and factory to the end that cane is not cut prematurely and that the harvest as a whole proceeds at a rate in keeping with the mill's ability to process the cane.

All of these things can and must be done if the industry is to survive. The growers, from the smallest to the largest, must face this fact and decide whether to go forward or go broke. To continue along the present course is to abandon hope of survival. If the grower cannot produce cane at a profit under the conditions set forth, then it is time to find some other way to utilize the energy now wasted. Cane cannot be successfully and economically cleaned at the mills, as the Hawaiian growers have decided after expending millions of dollars in an effort to solve this problem. It must be cleaned in the field. Experimental harvesters are available which can, under Louisiana conditions, do a very satisfactory job of cutting and cleaning cane provided that they are properly operated.

In conclusion, the industry has through force of circumstances eased into a situation which now threatens to ruin its milling segment. This situation has continued during the war years because money was made in spite of the troubles. With present sugar and molasses prices this is no longer possible.

Most of our troubles can be solved by re-educating the industry to the necessity of processing clean, fresh cane. These teachings can be enforced by making it unprofitable for the grower to continue to deliver stale cane carrying tops and trash. This can be accomplished by a much needed revision of the twelve year old cane purchase contract, plus a better coordination of field and factory operations.

[1] **A Study of the Declining Sugar Recovery in Louisiana,** John J. Seip and Arthur G. Keller; Engr. Expt. Station Bulletin, Series No. 14, Louisiana State University.

[2] **Preliminary Report of the Financial Results of the Operation of Raw Sugar Mills in Louisiana,** 1947; F. E. Stanley, Dept. Agr. Economics, La. Agri. Expt. Station, Louisiana State University.

[3] Louisiana Sugar Cane Purchase Contract, in effect 1936-37.

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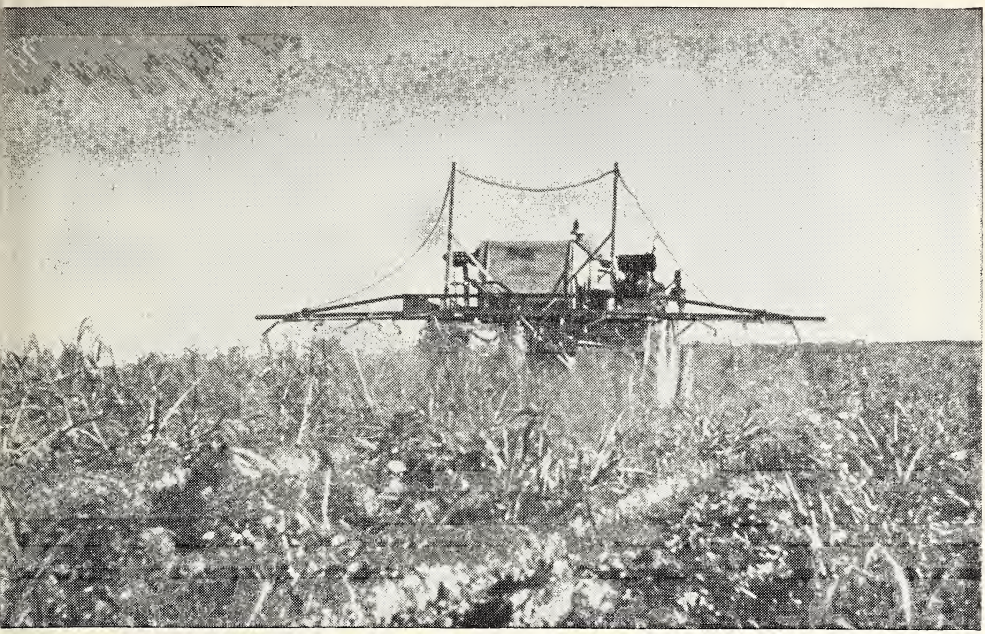

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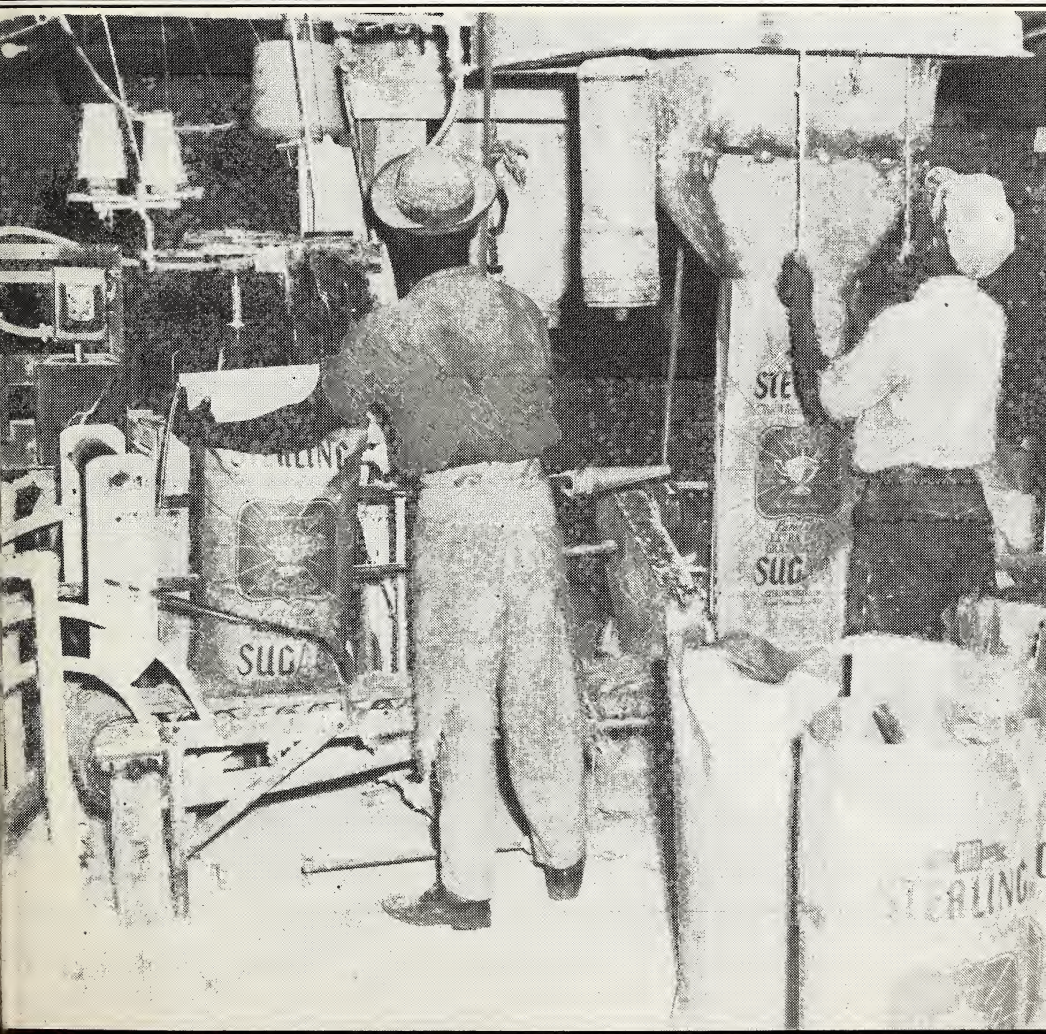

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# SOME OBSERVATIONS CONCERNING THE RESULTS OF THE 1948-49 CROP OF LOUISIANA SUGARCANE

*by W. M. Grayson, Louisiana State PMA Office*

The 1948 crop, like the 1947 crop, has harvested under extremely bad weather conditions. This fact alone increased difficulties of milling due to the presence of green trash, dry trash, Johnson grass and field mud, and lowered recovery. The result of delivering excessive trash and green tops was to lower the sucrose content in cane, increase the amount of fibre and lower the sucrose and purity of the extracted juice.

This crop just completed was the second largest on record from a sugarcane standpoint. 5,460,000 tons of cane were ground and 403,000 tons of sugar made. This compares with the crop year 1938 when 5,860,000 tons were ground and 488,000 tons of sugar made. The 1948 crop then was only 7% less in tonnage of cane ground but 17% less than 1938 in sugar output.

From total deliveries of sugarcane ground in 1948, 203,000 tons of trash were deducted making the net tons ground 5,257,000, however, had an additional 200,000 tons been removed, it is believed than 420,000 tons of sugar would have been made.

Table I gives a comparison of fibre in cane, normal juice extraction and sugar recovery. Normal juice purity is also shown. From this table it is seen that as the fibre in cane increases, the normal juice extraction and sugar recovery of sugar decreases. The same is true of normal juice purity.

Table I also shows a drop in normal juice extraction from 74.4 in 1942 and 74.9 in 1943 to 70.6 in 1947 and 71.9 in 1948, an average drop of about 3.5%. Actually this difference would be greater if it were not for a considerable amount of tops being delivered to the mills as mill cut cane. These tops, being immature and somewhat softer than properly cut cane, contain more juice and less fibre. Therefore, if they were excluded entirely, fibre in cane would increase and normal juice extraction drop accordingly. At the same time, tops contain little sugar and, what juice there is, is of much lower purity than the juice from properly topped cane. Therefore, it is to be expected that the sucrose and purity of the normal juice would suffer a considerable change on the down side. This apparently is the case as will be noted. The sample average normal juice sucrose and purity for the 7-year period, 1942-1948, are 12.2% and 76.05%, respectively, which compares with 12.70% and 77.63% in 1942 and 11.91% and 75.14% in 1948, respectively.

**Table I—Comparison of Normal Juice Extraction, Normal Juice Purity, Fibre % Cane, and Sugar Recovery**

| Crop Year | Normal Extraction | Normal Juice Purity | Fibre, % Cane | 96° Sugar Per Ton Cane, Gross Weight |
|---|---|---|---|---|
| 1942 | 74.41 | 77.63 | 13.99 | 171.5 |
| 1943 | 74.87 | 76.10 | 13.86 | 164.1 |
| 1944 | 73.27 | 75.03 | 14.25 | 152.5 |
| 1945 | 73.47 | 75.25 | 14.17 | 151.4 |
| 1946 | 72.32 | 76.74 | 14.84 | 155.9 |
| 1947 | 70.61 | 76.49 | 15.15 | 149.1 |
| 1948 | 71.90 | 75.14 | 14.95 | 146.1 |

Other factors being equal, one-tenth of 1% sucrose in normal juice is equal to about 1.5 pounds of 96 test sugar and a change of one point in purity makes a difference of about one pound of 96 test sugar under Louisiana conditions. A drop from 12.2 sucrose in normal juice to 11.9 would account for a loss of about 4.5 pounds of sugar and a drop in purity from 76.05 to 75.14 could account for another pound making 5.5 pounds in all.

Of course, the dilution of the sucrose in cane by the introduction of trash and tops makes extraction of the sucrose more difficult, increases the losses in bagasse, molasses, and mud, and this, no doubt,

(Continued on Page 241)

# IN WASHINGTON WITH C. J. BOURG

### Brannan's Plan

In the opinion of experienced Washington observers, the Brannan bill (to reorganize and "revolutionize" the general agricultural program) is showing signs of being somewhat better considered than when it was first proposed.

Of course, the Brannan plan is considered socialistic and has not received the approval of national farm organizations like the Farm Bureau, the Grange, or the National Council of Farmer Cooperatives. It is receiving the support of the Farmers Union, which is definitely radical, and even it wants to make some amendments.

Brannan did fairly well before the House Agriculture Committee, after they had recovered from the first shock of his proposal. Some of the members of the Committee are inclined to favor at least part of the subsidy and control program of Brannan's. The Committee leans towards higher support guarantees than are contained in the Aiken Bill (Public La. 897, 80th Congress 2nd Session).

The farm groups are not inclined to support the Brannan subsidies, which they consider much too high. They fear that if these supports amount to too much money, there will eventually be serious opposition in Congress to making the tremendous appropriations for agriculture that the supports would require. They anticipate that this opposition could become formidable in times of depression, and might be wiped out; thus leaving agriculture in a pretty bad fix with prices set low for the benefit of consumers.

Some of the officials of national farm organizations were very critical of the Brannan plan and opposed it with such epithets as "politico-economic philosophy" and "economic mirage". The opposition of farm leaders is based upon the fact that the Brannan program would reduce farmers to a production "straight-jacket".

While observers feel that the House Committee will accept some of the Brannan proposal, they definitely do not expect the Committee to accept the entire program. Members of the Committee are not inclined to favor the income parity-formula or to place a $25,000 limitation on farm payments, thus reducing participation to family-sized farms. This would be particularly disastrous if it applied to sugar plantations in Louisiana, Florida, Hawaii, or Puerto Rico, and might affect beet ranches in California or other Western states.

However, on the Senate side, they do not consider Brannan's chances as very good. Senator Aiken has built up a pretty good following in the Agriculture Committee and he will naturally defend his own Bill, which is now the law and will go into full effect in January 1950.

Under these circumstances, and in view of the general uncertainty of what action Congress will take, we are very grateful for the Sugar

(Continued on Page 245)

# CROP NEWS BY PARISHES

## from

## COUNTY AGENTS

Field conditions have improved considerably since our friends, the county agents, reported in April, but there is still considerable work to be done before the present crop can be considered to be a "normal" one.

We are very grateful to the county agents for continuing to keep the industry advised on the crop conditions in their districts.

**Assumption Parish.** Field work in Assumption Parish was still about 10 days late on May 10th, according to a report from E. J. Lousteau, county agent. Mr. Lousteau states that from the present outlook most of the farmers in his district are expecting a slightly better than normal crop if a usual summer prevails. The canes in Assumption Parish are generally up to a good stand and a better than normal growth had been registered up to May 10th. Fertilizing operations are late.

**St. John Parish.** In a report also dated May 10th, V. O. Calandro, county agent of St. John Parish, states that the cane crop in his district is about thirty days late and that field operations are also about a month behind schedule. The stands are good, however, and Mr. Calandro says that in spite of the continuous spell of rain a good crop is anticipated. Some farmers in his district are predicting that production costs will be lower this year because of the impossibility to do more cultivation. Fertilizing operations in his district are progressing favorably.

**Lafourche Parish.** C. J. Arceneaux, county agent, advised us on May 11th that field work in his district was about 15 days late and that the cane crop as a whole was about 21 days behind a normal growth. Fertilizing operations are also late. Mr. Arceneaux states that about fifteen per cent of the cane had not yet been fertilized on May 11th, but that a continuation of the dry weather will soon bring all operations up to normal.

**Pointe Coupee Parish.** A. B. Curet, county agent of Pointe Coupee Parish dated his report May 10th and stated that field operations in his district were still about 30 days behind schedule on that date. In commenting on the general conditions Mr. Curet remarked that although stands are generally fair to good the field work is not up to schedule and he believes that it is possible that the excessive grass and lack of early work in the fields will injure the crop considerably. He reports fertilizing operations as progressing favorably.

**St. James Parish.** "All indications look to a good crop this year", Joseph Lamandola, county agent of St. James Parish, reported on May 10th. Work in the fields is about 15 days late for this time of the year but the stands are good and the growth of the canes is about up to normal. Fertilizing operations are late.

**West Baton Rouge Parish.** The report from A. E. Camus, county agent of West Baton Rouge Parish, was dated May 11th. He reports that the field work in his district was about caught up on that date with the stands of the cane very good and the growth of the crop about up to normal.

Fertilizing operations are progressing favorably and Mr. Camus says that both stubble and plant cane crops are much better than they were last year. "Field work is not up to date," he says, "but two-thirds of the fertilizer is down and by the end of the week practically all will have been applied."

"About 1,000 additional sheep were brought into the Parish to help control the grass. The prospect for a good yield is even better than last year if we have continued favorable weather."

**Iberia Parish.** W. E. Williams, county agent of Iberia Parish, has favored us with a special report on the crop conditions in his district as of May 10th and we print this below:

Field work in Iberia Parish is about three weeks late. However with good weather prevailing during the past several days farmers are catching up very rapidly. If good weather prevails for another two weeks practically all the farmers of the parish will have their crops in good condition considering the unfavorable season we have had so far.

The stands of sugarcane in most places are good and the growth at the present time can be considered about two to three weeks behind the like period in 1948.

Fertilizer operations are progressing rapidly at the present time, however, it may be considered a little late, nevertheless farmers have no alternative, therefore must apply their fertilizer this late.

With good weather prevailing from now throughout the remainder of the season Iberia Parish farmers will make a fair to good cane crop.

Johnson grass is taking its toll of good cane land in Iberia Parish. It is spreading very rapidly and becoming a major problem for cane farmers.

On several plantations it is becoming such a pest that operators are planning on fallow plowing several hundred acres to try to destroy the Johnson grass.

The corn crop in general looks fair at present, however, most of it will be late. Farmers who were fortunate enough to get their corn in early have a good prospect for a fair crop. Corn planted later can make a good crop if good weather prevails.

Plantation operators are going heavier into the planting of solid beans for soil building purposes. A number of them are fertilizing their solid beans with superphosphate and potash or with superphosphate alone.

**St. Landry Parish.** On May 11th A. K. Smith, Jr., county agent of St. Landry Parish, reported that field operations in his section were about 21 days late and that the grow of the cane crop was about 14 days behind schedule. The canes, however, are up to a good stand. The fertilizing operations are also late.

———o———

## Rain Making Experiments

The Honorable Hale Boggs, the energetic and able Congressman from the 2nd Louisiana Congressional District, received the letter that we print below from the United States Weather Bureau on April 29th. Mr. Boggs has been endeavoring for some time to interest the Weather Bureau in conducting artificial rain experiments in this area and it is very gratifying to learn that his efforts have been successful.

The letter was sent to Mr. Chas. A. Farwell at whose request it is being printed in this issue of *The Sugar Bulletin.*

April 29, 1949

Dear Mr. Boggs:

From our previous correspondence, I believe that you will remember that the Weather Bureau has been conducting airplane "cloud seeding" investigations for the last few months in the State of California. This phase of our work is now completed and plans have been made to transfer our operations to the southern region of the United States along the Gulf of Mexico. These seeding investigations will originate from the Air Force base in Mobile, Alabama, and should be in operation by May 1, 1949.

We are forwarding this information so that you and Mr. Charles

Farwell, of New Orleans, may be fully aware of our activities in this section of the United States.

Sincerely yours,
F. W. REICHELDERFER
Chief of Bureau

—o—

# THE MARKETS

On April 29th the price of Louisiana Blackstrap dropped to 5⅝ cents a gallon, in bulk f.o.b. plantation, and one additional sale has been reported at this new price.

The price of raws has advanced from 5.70 cents a pound to 5.80 and 5.85 cents a pound since April 29th and there appears to be a general feeling in the trade that sugar prices are definitely on the way up.

The following paragraphs were taken from a circular of Lowry & Co., dated April 19, 1949. They originally appeared in the April Bulletin of the *Cuban Chamber of Commerce in the United States.*

On February 15, 1949 the Bureau of Labor Statistics "Cost of Living Index" stood at 169.0. Unofficial compilations indicate that it is still trending downward, and some Washington commentators say that an average loss of one point per month is expected for several months ahead. We have no opinion as to the future course of the Index, but for the purpose of our discussion let us assume that it declines to 159 by December 15th with an average for the year of say 164.

We are being asked if this may not call for a revision of our thinking on probable sugar prices for 1949. The questioners apparently have in mind the testimony presented last November at the quota hearings, the burden of which was that the cost of living index had steadily advanced since price controls were removed while sugar declined. Because of the "Price of Sugar/Index relationship" clause in the Sugar Act, it was then argued that the price of sugar should be raised by means of a small or conservative quota in order to bring it more into line with the Index. The Secretary of Agriculture obviously agreed with the sugar people's arguments, as evidenced by the small initial quota and the conservative handling of deficit reallocations.

With the Index declining, as assumed above, is sugar entitled to a further rise? Or, in other words, is time taking care of the situation for sugar producers who have complained of rising costs of growing and processing in the face of lower prices for sugar and the important by-product, blackstrap molasses?

Obviously, reduced costs, to the extent that they may be measured by a cost-of-living Index, have improved for producers and growers. But if the Price/Index clause of the Sugar Act is to be considered even casually as a formula for arriving at something approximating a fair relative value of sugar, then prices are still low whether we are considering the present Index of 169, or the assumed average 1949 Index of 164. This can be shown by the following computations:

During the "base" period January 1, 1947/October 31, 1947, adopted by the framers of the Sugar Act, the Consumer's Index averaged 157.8. The average seaboard list price of refined sugar was $8.27 per hundred pounds. To maintain the same relationship during 1949, with an assumed Index of 164, the price of refined sugar should be

$$\frac{164}{157.8} \times \$8.27 = \$8.59 \text{ per 100 lbs.}$$

The refined move on January 3, 1949 was booked at 7.75¢, and the

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second move of March 29th was at 7.85¢ or an average of 7.80¢ for business expected to cover approximately five months of the year. Measured by the Sugar Act standards, then, sugar is still cheap and under-priced in relation to the other items making up the Index. If all the rest of the refined business done this year were at $8.25 the average price would still be lower than the average during the "base" period of 1947 when the cost of living index stood at only 157.8.

Washington's attitude is perhaps the most important factor in determining the course of prices for the remainder of the year. The present U. S. A. quota is admittedly on the tight side. This is borne out by actual distribution to the end of March, which shows no signs of declining and is comfortably ahead of the "theoretical" distribution that should have been made to that date on the basis of an annual quota of 7,250,000 tons. It is generally accepted that actual distribution will continue to show a slow gain on "theoretical", and that some increase in the over-all quota may be called for late this year. We would not expect any tinkering with the quotas, however, until it is clearly demonstrated that more sugar is needed, and not until the price has reached a figure considered fair and reasonable by the Secretary of Agriculture. We understand that the Secretary has already indicated to the Louisiana producers that no further deficits will be reallocated until middle or late summer. This procedure of itself makes the effective "for sale" quota considerably less than the stated figure of 7,250,000 tons, and indicates that Washington does not consider the price of sugar too high, and perhaps not high enough.

Since the U. S. A. is the only guaranteed market that sugar producers have, it is up to them to determine, by their selling policy, just what the Secretary of Agriculture considers a reasonable price. He can not be expected to do their marketing for them.

—o—

## SOME OBSERVATIONS

(Continued from Page 236)

will account for the rest of the difference between actual yield and the yield that could be expected when cane is properly harvested.

To show the effect on yield of sucrose in normal juice, Table II has been prepared to give a comparison of the actual recovery of sugar at various sucrose levels for the years 1942 to 1948, inclusive, with the commercially recoverable sugar table used as a basis of payment under the provisions of the Sugar Act. From this table it is apparent that the yield of sugar per ton of cane has gradually decreased from 171.5 pounds in 1942 to 146.1 pounds in 1948. The difference between these yields and the commercially recoverable sugar corresponding to the normal juice sucrose has shown an increase or widening of the spread since 1942, the greatest difference being in 1947. It may be said that decrease in normal juice sucrose is followed by a decrease in yield. Generally speaking, this is correct, other factors being equal, as can be seen by a glance at the commercially recoverable sugar column. However, although there was a slight increase in normal juice sucrose in 1947 over 1946, and commercially recoverable sugar increased, there was a big drop in actual recovery showing that some other factors were involved. This decline continued in 1948 but to a lesser degree and indicates that the drop in yield was probably caused by the introduction of large amounts of trash and mud, and a lowering of the purity due to stale sugar cane.

The next to last column of Table II gives the actual yield per ton of cane adjusted to a net cane basis, that is after trash deductions. Since there were no deductions made before 1945 no difference is shown

in the table for years prior to that. While trash deductions were not compulsory until 1948, deductions made in 1945 amounted to 0.41% of the total cane ground and increased gradually until 3.72% was deducted in 1948. One effect of these deductions was to narrow the difference between actual yield and commercially recoverable sugar which still remained, however, 12.0 pounds apart in 1947 and 7.6 pounds in 1948. Another was to increase the yield from 0.6 pounds per net ton in 1945 to 5.6 pounds per net ton in 1948. Trash deductions in 1948 saved the processors about $1,200,000 they would otherwise have paid for cane.

Table III gives a recapitulation of sucrose balances for the years 1942 to 1948, inclusive, expressed in pounds of 96 test sugar per ton of cane. This table shows, among other things, that the total sugar in cane has decreased from 216 pounds to the ton in 1942 to less than 200 pounds in 1948. Also, there is a corresponding decrease in the amount of sugar extracted per ton of cane and the amount of 96 test sugar recovered as sugar. Sugar lost in bagasse increased from 19.0 pounds per ton in 1942 to 22.3 pounds in 1947 and 20.8 pounds in 1948. Sugar lost in blackstrap molasses has increased about 3 pounds per ton of cane and the loss in press cake and undetermined losses has increased about 3 pounds also. On a percentage basis, losses in bagasse have increased about 1.5% to 2% of the sucrose in cane, molasses losses have increased an equal amount and press cake and undetermined losses have almost doubled.

Sugar recovered, per cent sugar in cane, has decreased from 79.4% in 1942 to 73.3% in 1947 and the same in 1948. This is a considerable loss percentage-wise and, in my opinion, is due to the causes above stated, namely, poor topping, excessive trash, stale cane, and field mud.

In looking for the reason for the decreased recovery of sugar one must not overlook the trend toward lower normal juice sucrose and purity levels, part of which in 1948 must be attributed to the last maturing of cane. Consideration must also be given to the reverse in 1947, which might account for the higher sucrose content of normal juice in 1947. However, it must be recognized that the harvesting trend of late has been to top sugarcane much higher than normal, to deliver excessive amounts of trash, and to leave sugarcane in the field for longer periods than should be the case. Bad weather was also a contributing cause. Such practices throw an unusually hard burden on milling, the clarification system and the filter station, and without a doubt, results in large press cake and undetermined losses, and decreased boiling house efficiency.

Since boiling house efficiency is the ratio between sucrose actually recovered and the sucrose theoretically obtainable from any given sample of juice, the items that affect boiling house efficiency under given conditions are losses in molasses, losses in press cake, and undetermined. Nothing else enters the picture. Boiling house efficiency has shown a steady decline from 98.29%

**Table II—Comparison of Normal Juice Sucrose, Percent, with Actual Sugar Recovery and Sugar Commercially Recoverable**

| Crop Year | Normal Juice Sucrose, % | 96° Sugar Commercially Recoverable T/C | 96° Sugar Actually Recovered T/C Gross Cane Basis | Difference | 96° Sugar Actually Made Adjusted to Net Cane Basis | Difference |
|---|---|---|---|---|---|---|
| 1942 | 12.70 | 171.9 | 171.5 | — .4 | | |
| 1943 | 12.39 | 166.9 | 164.1 | — 5.8 | | |
| 1944 | 11.93 | 159.6 | 152.5 | — 7.1 | | |
| 1945 | 11.86 | 158.6 | 151.4 | — 7.2 | 152.0 | — 6.6 |
| 1946 | 12.31 | 165.7 | 155.9 | — 9.8 | 157.6 | — 8.1 |
| 1947 | 12.33 | 166.0 | 149.1 | —16.9 | 154.0 | —12.0 |
| 1948 | 11.91 | 159.3 | 146.1 | —13.2 | 151.7 | — 7.6 |

in 1942 to 93.73% in 1947 and 94.39% in 1948. This is just another way of saying that losses in molasses, press cake, and undetermined have increased through the years and that the mills have found it more difficult to recover as much of the sugar in the cane as they use to under normal harvesting conditions.

While the problem is a serious one which affects the life of the industry itself, it is capable of solution. When some mills made proper trash deductions and carefully supervised the topping and delivery of fresh sugarcane, yields on a net cane basis did not vary much from the recoverable sugar obtainable under normal conditions. Table IV shows the relationship between the recovery on a net cane basis of 3 groups in the Eastern Division, that is the Bayou and River section, and 3 groups in the Western Division, factories located West of the Atchafalaya River.

In the first group, 14 factories; having an average of 12.35 sucrose in normal juice, recovered an average of 163.3 pounds of 96 test sugar per ton of cane and 9 factories, having 11.51 sucrose in normal juice, recovered 150.6 pounds of sugar per ton of cane. In the Western Division 7 factories, having a normal juice sucrose average of 11.80, recovered 159.4 pounds per ton of cane and 8 factories, having 11.84% sucrose in normal juice, recovered 151.5 pounds of sugar per ton of cane. The amount of trash deducted by mills in the Eastern Division averaged 4.26% while mills in the Western Division deducted 2.78%. Had the Western group having the highest recovery made trash deductions equal to deductions made by the highest group in the Eastern Division the yield per net ton of cane would have been 161.4 pounds. This yield, at the normal juice sucrose level indicated, would have been 3.8 pounds more than that indicated in the commercially recoverable table. Group II in the Western group would have produced 4.3 pounds less than that shown on the recoverable sugar table. The natural conclusion from this is that if sugarcane is properly topped and delivered fresh, regardless of whether or not the dry trash is removed, when proper deductions are made, the yield on a net cane basis would return to normal or nearly normal under fair weather conditions.

Returning to the state averages for the 1948 crop and adjusting the purity to a normal basis of 77.0, the per cent sucrose in normal juice would be increased to 12.2% and sucrose extracted, per cent cane, to $.719 \times 12.2\% = 8.771$. This corresponds to 182.7 pounds of 96° sugar, 81.9% of which is recoverable if no improvement in boiling house efficiency had resulted from the increase in purity. This means that if only the purity had been normal the yield per ton of gross cane would have been 149.6 pounds per ton instead of 146.1. If sufficient trash had been removed so that the nor-

**Table III—Recapitulation of Sucrose Balances of Louisiana Sugar Mills, 1942-1948, Pounds of 96° Sugar**

| Crop Year | 96° Sugar in Cane Pounds | 96° Sugar Extracted in Juice Pounds | 96° Sugar Lost in Bagasse Pounds | 96° Sugar Recovered in Sugar Pounds | 96° Sugar Lost in B/S Molasses, Lbs. | 96° Sugar Lost in Press Cake and Undetermined |
|---|---|---|---|---|---|---|
| 1942 | 216.0 | 197.0 | 19.0 | 171.5 | 19.7 | 5.8 |
| % in Cane | 100.0 | 91.2 | 8.8 | 79.4 | 9.1 | 2.7 |
| 1943 | 212.5 | 193.2 | 19.3 | 164.1 | 22.2 | 6.9 |
| % in Cane | 100.0 | 90.9 | 9.1 | 77.2 | 10.4 | 3.3 |
| 1944 | 202.0 | 182.1 | 19.9 | 152.5 | 21.8 | 7.8 |
| % in Cane | 100.0 | 90.1 | 9.9 | 75.5 | 10.8 | 3.8 |
| 1945 | 199.3 | 181.5 | 17.8 | 151.4 | 23.5 | 6.6 |
| % in Cane | 100.0 | 91.1 | 8.9 | 76.0 | 11.8 | 3.3 |
| 1946 | 205.9 | 185.5 | 20.4 | 155.9 | 20.8 | 8.8 |
| % in Cane | 100.0 | 90.1 | 9.9 | 75.7 | 10.1 | 4.3 |
| 1947 | 203.5 | 181.2 | 22.3 | 149.1 | 21.0 | 11.1 |
| % in Cane | 100.0 | 89.0 | 11.0 | 73.3 | 10.3 | 5.4 |
| 1948 | 199.2 | 178.4 | 20.8 | 146.1 | 22.6 | 9.7 |
| % in Cane | 100.0 | 89.6 | 10.4 | 73.3 | 11.4 | 4.9 |

mal extraction returned to 74.4 as it was in 1942, then sucrose extracted, per cent cane, would have been .744 × 12.2% = 9.077%, equivalent to 189.1 pounds of 96° sugar. If 81.9% of this were recovered, the yield would have been 154.9 pounds per ton.

There appears to be no doubt that the boiling house efficiency has decreased because of poor quality cane and juice. If this is taken into consideration and the above yields calculated on a 98.28 basis instead of the present 94.39, the yield would be increased to 161.3 pounds.

In conclusion, it may be stated, that, in the opinion of the writer, loss of recovery is due entirely to the lower sucrose content of sugarcane now being milled and reduced purely due to tops and stale cane. This does not mean that the varieties of cane now grown have less sucrose than formerly, the evidence does not bear this out. It does mean, however, that the sucrose in cane is being diluted with water, field mud, trash, and the juice from immature joints of sugarcane that should be removed in the field and left there: and that too much time elapses between cutting and milling. When these conditions are corrected, it is my firm conviction that the yield of sugar per ton of cane will return to normal and equal or exceed commercially recoverable sugar for Sugar Act payment purposes.


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**Table IV—A Comparison of the Recovery of Sugar Mills East and West of the Atchafalaya River**

| | Eastern Division | | | | | Western Division | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of Factories | Sucrose Normal Juice, % | Trash Deducted % Cane | 96 Test Sugar Per Ton Net Cane, Pounds | Com. Recoverable Sugar Per Ton Net Cane, Lbs | No. of Factories | Sucrose Normal Juice % | Trash Deducted % Cane | 96 Test Sugar Per Ton Net Cane, Pounds | Com. Recoverable Sugar Per Ton Net Cane, Lbs |
| Group I 155 Lbs. & above | 14 | 12.35 | 3.60 | 163.3 | 164.4 | 7 | 11.80 | 2.42 | 159.4 | 155.8 |
| Group II 145-155 Lbs. | 9 | 11.51 | 4.34 | 150.6 | 151.3 | 9 | 11.84 | 2.90 | 151.5 | 156.4 |
| Group III 145 Lbs. and less | 5 | 11.84 | 6.35 | 144.4 | 156.4 | 7 | 11.69 | 3.11 | 136.8 | 154.1 |
| Totals | 28 | 12.04 | 4.26 | 156.3 | 159.5 | 23 | 11.78 | 2.78 | 151.2 | 155.5 |

## IN WASHINGTON

(Continued from Page 237)

Act of 1948 which still has almost four years to go.

### Bullish Near-Term Sugar Market Opinion Assumed

(*From B. W. Dyer & Company release of May* 2, 1949)

Since November 5, 1948, when July and September domestic #5 futures were selling at about $5.00, we have consistently expressed our long-term raw sugar opinion as bullish.

Our last short-term opinion changed from bullish to neutral on March 2nd when raw sugar sold at $5.25. Raw sugar thereafter sold as low as $5.05. The possibilities we then foresaw of producers' forced selling either because of lack of warehouse space or financing have thus since been realized. The market price for raws is again $5.25.

In our judgment the period when producers must sell, whether or not they want to, has now passed or will shortly pass. We, therefore, change our near-term raw sugar market opinion to bullish to correspond to our long-term bullish sugar market opinion.

---

### Consumers' Price Index in Relation to Refined Prices

(*From Geo. E. Keiser & Company Sugar Market Review of May* 4, 1949)

It might be interesting at this time to refer to some figures received this week from the U. S. Department of Labor, Bureau of Labor Statistics, concerning Consumers' Price Index and Retail food prices as of March 15, 1949. After declining for five consecutive months from a high of 174.5 last September to 169.0 in February, the


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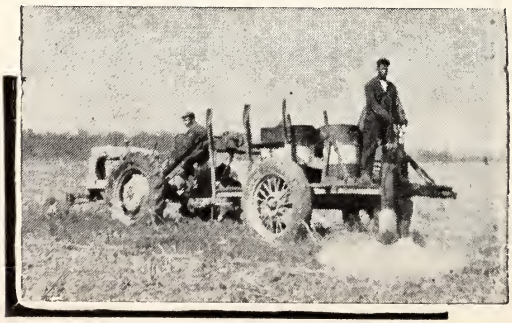
Consumers' Price Index advanced as of March 15 to 169.5. In Section 201, Title II, of the Sugar Act of 1948, the Secretary of Agriculture is directed to give consideration, among other factors, to "the general cost of living in the United States as compared with the relationship between prices at wholesale for refined sugar and the general cost of living in the United States obtaining during 1947 prior to the termination of price control of sugar as indicated by the Consumers' Price Index as published by the Bureau of Labor Statistics of the Department of Labor."

Using the formula which this section of law prescribes, the refined sugar price today would be $8.88 less 2 percent. Last September when the high point of 174.5 was reached, the Index indicated $9.15 less 2 percent and at the low point of 169.0 in February, the indication was $8.86 less 2 percent. These figures are arrived at by taking the 10 month's average of the Consumers' Price Index prior to decontrol on October 31, 1947 which was 1.578 and the 10 month's average price of granulated for the same period of $8.27 less 2 percent.

Whether, because of this clause, or for other reasons, the Administration talks of higher prices for refined.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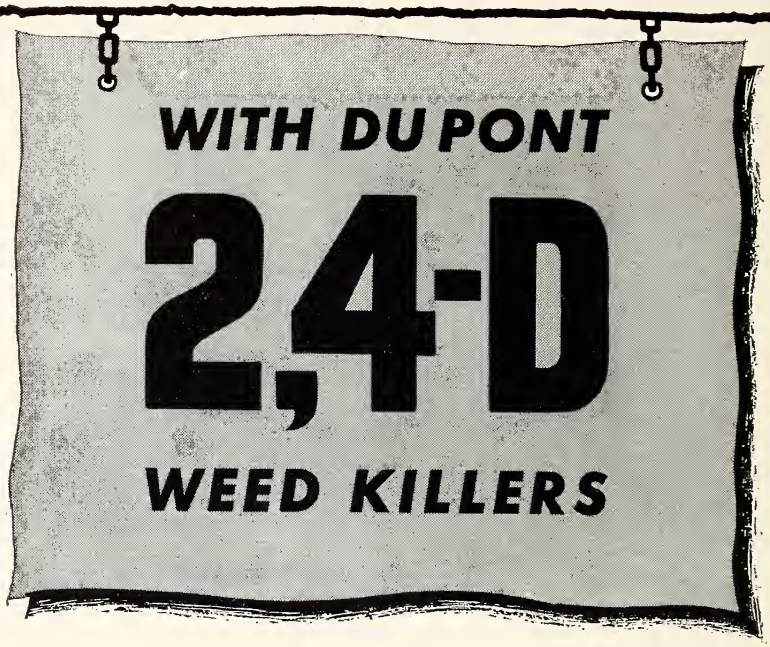


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# GALLONS PER ACRE FORMULAS

*(Prepared by Mr. F. Evans Farwell)*

## Formula No. 1

For use in determining the speed of travel required to apply a specific number of gallons per acre.

(See Calibration Table)

$$\text{Miles per hr.} = \frac{495 \times \text{Gallons per minute per nozzle}}{\text{Nozzle spacing in feet} \times \text{Gallons per acre}}$$

Example: The sprayer has nozzles spaced 18 inches or 1½ feet apart on the boom, each delivering 0.2 gallons per minute with pressure set at 40 pounds per square inch. But it is desired to apply 22 gallons per acre. Then:

$$\text{m. p. h.} = \frac{495 \times .2}{1.5 \times 22} = \frac{99}{33} = 3 \text{ miles per hour}$$

## Formula No. 2

For use in determining the actual number of gallons applied per acre with different adjustments at specific speeds.

$$\text{Gallons per acre} = \frac{495 \times \text{Gallons per minute per nozzle}}{\text{Nozzle spacing in feet} \times \text{Miles per hour}}$$

Example: The sprayer has nozzles spaced 18 inches or 1½ feet apart on the boom, each delivering 0.2 gallon per minute with pressure set at 40 pounds per square inch as above. The forward speed is 3 miles per hour. Then:

$$\text{g. p. a.} = \frac{495 \times .2}{1.5 \times 3} = \frac{99}{4.5} = 22 \text{ gallons per acre}$$

The Calibration Table following may be used as a guide but for accurate calibration, each sprayer should be prepared with the desired nozzle size at uniform spacing on the boom, the pressure adjusted to 30 or 40 pounds, the delivery of several nozzles checked and the calibration calculated for the particular adjustment of that spraying unit.

After the unit has been completed, it should be field-checked to determine the actual amount per acre being sprayed at the speed it is desired to travel. Field checking can be done as follows:

1. With the unit ready to spray and adjustments made, fill the supply tank completely full of water.

2. Mark off an area to be sprayed which will be exactly one acre. This should preferably be done on a roadway or field border where spraying of an acre can be accomplished without changes of forward speed. To determine distance to spray for covering one acre, divide 43,560 (square feet per acre) by the length of the boom on the tractor. This will give you the number of feet to travel in covering one acre. For example, if the spray boom were 50 feet long, one would proceed thus:

$$\frac{43{,}560}{50} = 871.2 \text{ feet for one acre}$$

This distance can be converted to rods by dividing the answer by 16.5 feet per rod thus:

$$\frac{371.2}{16.5} = 52.8 \text{ rods for one acre}$$

3. With the distance marked off begin with the boom parallel to the first mark and shift into the gear for the speed desired and spray the distance to the second mark, travelling at full throttle or at the throttle setting which will be used in the field.

4. Refill the supply tanks to completely full, measuring the gallons required to do so.

5. The gallons required to fill the tank will be the number of gallons sprayed per acre at the speed and sprayer adjustment just used in calibration. It should be remembered, however, that under conditions of actual operation in the field the average gallon per acre will be greater due to over-lap of spray, both in traversing the field and in turning. A lowering of speed occasioned by crossing ditches or avoiding obstructions will also increase the total gallonage per acre.

(Continued on page 262)

# IN WASHINGTON WITH C. J. BOURG

### Corn Sweeteners

Combined sales of corn sugar and corn syrup currently run at an annual rate of from 1,000,000 to 1,400,000 tons. Allowing for the lower sweetening properties of corn derivaties, this is equivalent to about 600,000 to 800,000 tons of sugar per year.

Prior to the war, annual sales of corn sugar and corn syrup remained fairly constant. With the imposition of emergency controls, however, cane and beet sugar were strictly rationed, while corn sweeteners remained unrationed. As a result, during the war and immediate post-war years, sales of corn sugar and corn syrup rose sharply and in part made up for the lessened availability of cane and beet sugar.

Normally, corn sugar sells at lower prices than cane or beet sugar. During the ten years 1931-1940, the wholesale price of granulated sugar at New York averaged $1.26 per hundred pounds more than the wholesale price of glucose. During the war, when sugar was scarce, this differential exercised little influence in determining the relationship of sales of cane and beet sugar to corn sweeteners, nothwithstanding the fact that considerable variation existed in the price differential from month to month.

With the end of rationing, however, and with sugar again in plentiful supply, the differential in price between cane and beet sugars as compared to corn sweeteners seems again to be influencing purchasing policies of certain industrial users. During the course of the 24 months ended December 1948, this differential ranged from as much as $3.20 per hundred pounds to as little as $0.45 a hundred pounds. Either because of changes in the price of sugar or because of changes in the price of corn (on which the price of corn sweeteners primarily depends), the differential fell sharply throughout most of 1947 and early 1948, then recovered to some extent in the latter half of the year. During the same 24 months, sales of corn and corn syrups fell from the level of 125,000 tons a month to 68,000 tons, and then recovered to 87,000 tons.

With plentiful supplies of corn, the price of corn sweeteners compared to cane or beet sugar can be expected to result in a margin relatively favorable to the interests of corn sugar producers. It would appear that, if some further part of the sucrose market is not again to be replaced by corn sweeteners, the cane and beet sugar industries must adopt vigorous merchandising policies in fields where the two products are competitive.

### Cuban Sugar Purchases Announced

The U. S. Department of Agriculture, the British Ministry of Food, and the Cuban Sugar Stabilization Institute jointly announced on May 13th that agreement has been reached for purchases by the Com-

(Continued on page 260)

# DRAINAGE--SUGAR CANE LAND IN LOUISIANA

*Submitted by I. L. Saveson, Drainage Engineer, U. S. Dept. of Agriculture, Soil Conservation Service Research*

*(Graphs appear in original article)*

This project is a joint research project of the Louisiana Agricultural Experiment Station and the U. S. Department of Agriculture Soil Conservation Service Research, established at the request of the American Sugar Cane League and interested land owners. The research carried on is drainage of sugar cane land in Louisiana. Local plantations furnish the sites for the work along with labor, keeping yield records, and other miscellaneous items of cooperation.

This research involves the developing of methods and machinery to accomplish and maintain desirable drainage for sugar cane cultivation; and also the testing and adapting of available equipment and methods.

The grinding season was delayed this year approximately one week due to the late maturity of the cane which results in low sucrose. The cane harvested was approximately 35 per cent above the 1947 harvest and the sugar produced was approximately 20 per cent above 1947. The grinding season ran well into January. Several sugar houses closed shortly after grinding season was under way due to the low sucrose of the cane. Many others reported losses for this years operation.

The seasons rainfall at the two test areas was relatively well distributed. The beginning of the grinding season in October was dry. November and the last of December had exceptionally heavy rains which caused a problem in getting cane out of the field. Some cane was abandoned in the field.

## Sugar Cane Land Grading for Drainage by Cut Crowning

(Often spoken of as turtlebacking)

### The Smithfield Test Area

*Amount of Crown Versus Yields*

I. *Description of Area*

The Smithfield test area is a black land area consisting of nine cuts. Cuts 1 and 2 have a bad seepage streak across the West end with a lesser seepage streak in cut 3. The area was used for the projects first work on cut crowning trials with different types of equipment and methods. The work resulted in a number of cuts with different amounts of crown. After working in spring of 1946 the area was fallowed the summer of 1946. It was planted to winter legumes the winter of 1946 and 1947. In the spring and summer of 1947 it was again in fallow. It was planted to cane the fall of 1947, the variety C. P. 36-105.

Enclosed is a detailed chart of the area for the year 1948, Chart 1. The area was harvested November 16 to 23. After harvesting, the area in cane was measured and the acreage shown on the chart is the net acreage in cane deleting the area in head lands and ditches. Levels were taken across the area and the average cross section and crown ascertained. Plate #1 is a map of this area.

II. *Observations*

A. The data from Chart #1 shows an increase yield in tonnage of sugar cane with a faster increase in sugar as the crown of the cut is increased to 13 inches of crown per 100 ft. Where the crown is increased beyond this point the yield of sugar cane and sugar decreases. A graph is enclosed showing amount crown versus yields. Plate #2.

B. Cuts 4, 5, and 7 can be considered an applicable range of crowning that can be expected from plantation cut crowning on cuts that are not effected by seepage.

## YIELD DATA ON SMITHFIELD TEST AREA ON CUT CROWNING (TURTLEBACKING) EQUIPMENT TRIALS—PLANT CANE

| Cut | Acre | Tons Sugar Cane | | Sucrose | Brix | Purity | Sugar | | Inches Per 100 ft. crown | Precision of Grading % of area Ponded | Equipment Used | Av. Width of Cut in Cane | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | Per Acre | | | | Per Ton | Per Acre | | | | | |
| *2 | 3.35 | 116.48 | 34.77 (std. 36.33) | 12.67 | 16.57 | 76.46 | 169.06 | 5878.22 | 6 in. | none | Dozer and Heavy Grader | 165 | Seepage streak across West end. |
| 8 | 4.38 | 184.83 | 42.19 (std. 39.65) | 11.24 | 15.57 | 72.19 | 144.54 | 6098.14 | minus 3 in. | 61.9 | Heavy Grader | 226 | Partially worked. Height of ditch shoulder reduced. A little lighter soil. |
| 6 | 2.09 | 85.39 | 40.86 | 11.69 | 15.69 | 74.51 | 152.10 | 6214.80 | 19 in. | 14.6 | Dozer and Heavy Grader | 109 | |
| *3 | 3.01 | 118.99 | 39.53 (std. 40.12) | 12.30 | 16.23 | 75.76 | 159.71 | 6313.34 | 5 in. | 10.3 | Dozer and Heavy Grader | 150 | Seepage streak tapering out across west end. |
| 7 | 2.64 | 116.59 | 44.16 | 11.75 | 15.41 | 76.25 | 156.35 | 6904.42 | 7 in. | 13.5 | Parsons Whirlwind | 133 | |
| 4 | 2.38 | 99.98 | 42.01 (std. 43.06) | 12.46 | 16.57 | 75.20 | 164.76 | 6921.57 | 9 in. | 36.3 | Plows and Heavy Grader | 110 | |
| 5 | 2.25 | 96.89 | 43.05 (std. 45.42) | 12.80 | 16.70 | 76.65 | 171.04 | 7364.98 | 13 in. | 9.9 | Heavy Grader | 122 | |
| Check | 2.37 | 96.61 | 40.76 (std. 39.12) | 11.29 | 16.44 | 74.76 | 140.20 | 5714.55 | minus 6 in. | 62.5 | None | 120 | Adjoins main canal. |
| *1 | 1.86 | 47.04 | 25.29 (std. 27.13) | 12.87 | 16.57 | 77.67 | 173.46 | 4386.8 | 21 in. slope one way. | 10.9 | Dozer and Grader | 90 | Worked in mud and has bad seepage streak which reduced yields. |

* Bad seepage streak across west end of cuts 1 and 2 and tapering out across cut 3.

**Footnotes:** Area graded Fall of 1945 and Spring of 1946. In fallow balance of 1946 with winter cover crop. In fallow spring and fall of 1947—Planted Fall 1947—Variety—36-105—Fertilizer—40 lbs. of nitrogen. Entire area black land with lighter streak of soil across cut No. 8. Cane area free from Johnson Grass. Sugar computed using Winter-Corp-Goorligs formula without consideration of variety correction factor.

## YIELD DATA OF WESTOVER TEST AREA ON CUT CROWNING EQUIPMENT TRIALS—PLANT CANE

| Cut | Acre | Tons Sugar Cane | | Sucrose | Brix | Purity | Sugar | | Inches Per 100 ft. crown | Precision of Grading % of area Ponded | Equipment Used | Av. Width of Cut in Cane | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | Per Acre | | | | Per Ton | Per Acre | | | | | |
| D&J | 11.07 | 542.82 | 49.04 (std. 47.07) | 11.33 | 17.38 | 65.19 | 143.81 | 7052.44 | 6 in. | 53.3 | Parsons Whirlwind terracer | 270 | 6 in. crown on portion not ponded. |
| C&I | 6.70 | 325.20 | 48.54 | 11.98 | 16.22 | 73.86 | 156.41 | 7592.14 | 7 in. | 10.8 | Dozer and Grader | 159 | |
| F&L | 7.83 | 379.25 | 48.44 | 11.98 | 15.54 | 77.09 | 160.64 | 7781.40 | 9 in. | 53.9 | Parsons Whirlwind terracer | 177 | Area ponded by cleaning road ditch after working 9-inch crown on portion not ponded. |
| B&H | 6.58 | 312.56 | 47.50 (std. 49-16) | 12.61 | 16.41 | 76.84 | 168.77 | 8016.57 | 7 in. | .61 | Dozer and Grader | 160 | |
| E&K | 8.53 | 452.36 | 53.03 | 11.98 | 15.54 | 77.09 | 160.64 | 8518.73 | 6 in. | 11.63 | Dozer and Grader | 195 | |
| A&G | 6.02 | 366.66 | 60.90 | 11.83 | 15.95 | 74.17 | 154.87 | 9431.58 | 9 in. | 00 | Dozer and Grader | 162 | Soil from main canal spread over area in conjunction with crowning. |
| Check | 1.81 | 86.11 | 47.62 (std. 27.71) | 9.13 | 13.73 | 66.50 | 114.76 | 5464.87 | minus 3 in. | Plot graded 90% ponded | none | 184 | Check area harvested 11/29/48 approx. 30 days ahead of other areas. |
| Special | 1.38 | 67.06 | 50.16 | 11.81 | 15.6 | 75.71 | 156.52 | 7851.04 | No Crown cut slopes one way 2 ft. per 100 ft. | Not graded No Ponding | none | 162 | Harvested at time of check area. |

**Footnore:** Area graded May 1947, Planted to Variety 36-13, Fall 1947, fallowed balance of 1947—Fertilizer 200 lbs., 16-20-0. Cane cut 12/27/48 to 12/29/48 incl. Cane hauled 12/30/48 to 1/7/49 incl. Cane area free from Johnson Grass. Each block running from sandy to mixed land. Sugar computed by Winter-Corp-Goorligs formula without consideration of variety correction factor.

| Cut | Acre | Tons Cane Field | Standard | Sugar | Crown | Cane | Sugar |
|---|---|---|---|---|---|---|---|
| 4 | 2.38 | 42.01 | 43.06 | 6921.57 | 9 in. | 3.94 | 1207.02 |
| 5 | 2.25 | 43.05 | 45.42 | 7364.98 | 13 in. | 6.30 | 1650.43 |
| 7 | 2.64 | 44.16 | 44.16 | 6901.42 | 7 in. | 5.04 | 1189.97 |
| Av. | | 43.07 | 44.21 | 7063.66 | | | |
| Check | | 40.76 | 39.12 | 5714.55 | | | |
| Average Increase | | 2.31 | 5.09 | 1349.11 | | | |
| Maximum Increase | | 2.29 | 6.30 | 1650.43 | | | |

C. Cuts 1 and 2 have approximately the same amount of seepage; cut 1 was worked when it was exceptionally wet. Throughout the growing season the cane on this cut was less vigorous than any of the other cuts. You will note that the yield of cut 1 is 9 tons of standard cane and 1491.53 lbs. of sugar less than cut 2. From this observation and work on other areas it can be concluded that the grading work should not be attempted when the earth is exceptionally wet, especially black land.

(See Table on page 255)

## The Westover Test Area

I. *Description*

The Westover test area consists of 18 cuts; six cuts wide and three cuts long. A map is enclosed Plate #3.

The soil ranges from sandy land to some mixed land. This area was used for the volume cost studies in 1947. The entire area was graded using dozers, graders and Parsons whirlwind terracers. In addition to the 18 cuts there were two cuts which were not graded. Cuts A, G & M are adjacent to a canal and a head land. The earth from excavating the canals was placed on the head land raising it above the adjacent area. The head land was cut down from 24 to 30 inches. Grading was completed in May of 1947 and the area was in fallow the summer of 1947. It was planted to cane the fall of 1947—Variety C. P. 36-13. After hauling, the acreage in cane was measured and the acreage shown on the chart is the net acreage in cane deleting the area in head lands and ditches. Levels were taken across the area and the acreage cross section and percent of area ponded computed. The ungraded check area was harvested 30 days ahead of the graded area. Only approximate comparisons can be made on tonnage increases of sugar cane and the sugar comparisons cannot be made with check area.

II. *Observations*

A. The data from chart #3 shows a decrease in tonnage of sugar cane and a faster decrease in sugar as the amount of ponding increases. A graph is enclosed—precision of grading versus yields. Plate #4. You will note that this graph is in percentage of ponding over two inches. Two inches is approximate since the limit used in computing the pondage was .15 ft.

B. Assuming that the check area was standard tons of cane at harvest, which is probably over-rating it, and the average yield of cane on cuts having not over 12 per cent ponding which can be considered the minimum precision for this type of work the following comparison is made:

| Cuts | Acre | Tons of Cane Field | Standard | Precision % of Pondage | Increase Standard Tons |
|---|---|---|---|---|---|
| C&I | 6.70 | 48.54 | 48.54 | 10.8 | .92 |
| B&H | 6.58 | 47.50 | 49.16 | .61 | 1.54 |
| E&K | 8.53 | 53.03 | 53.03 | 11.63 | 5.41 |
| A&G | 6.02 | 60.90 | 60.90 | 00 | 13.28 |
| Av. | | 52.49 | 52.91 | | |
| Check | | 47.62 | 47.62 | | |
| | | 4.87 | 5.29 | | |

C. A special area marked "special" on the chart was harvested at the same time the check area. This area was not graded but had a side fall of 2 inches per 100 ft. from ditch to ditch. The area was regular and smooth, and had no pockets or ponded areas. The following is comparative data at time of cutting. 11/29/48:

| Cut | Acre | Tons of Cane Field | Standard | Sucrose | Sugar |
|---|---|---|---|---|---|
| Special | 1.38 | 50.16 | 50.16 | 11.81 | 7851.04 |
| Check | 1.81 | 47.62 | 27.71 | 9.13 | 5464.87 |
| | | 2.54 | 22.45 | | 2386.17 |

(See Table on page 255)

## Conclusions

I. Drainage increases the sugar in greater proportion than it increases the tonnage of cane. On the Smithfield test area we find the following:

| | Field | Standard | Sucrose | Sugar |
|---|---|---|---|---|
| Average | 43.07 | 44.21 | 12.34 | 7063.66 |
| Check | 40.76 | 39.12 | 11.29 | 5714.55 |
| | 2.31 | 5.09 | | 1249.11 |
| Maximum | 43.05 | 45.42 | 12.80 | 7364.98 |
| Check | 40.76 | 39.12 | 11.29 | 5714.55 |
| | 2.29 | 6.30 | | 1650.43 |

On the Westover area we are not able to make comparisons with the check on the graded areas. However, the special area which was harvested at the same time as the check we find the following:

| | Field Tons | Standard Tons | Sucrose | Sugar |
|---|---|---|---|---|
| Special | 50.16 | 50.16 | 11.81 | 7851.04 |
| Check | 47.62 | 27.71 | 9.13 | 5464.87 |
| | 2.54 | 22.45 | | 2386.17 |

II. For all practical purposes, the recommended crown on black land should be one foot per hundred foot according to the results on the Smithfield test area.

III. From Smithfield test area, working black land too wet impairs yields. It is recommended that black land be worked when the earth sheds freely from the bulldozer blade.

IV. From the results on the Westover Plantation, and for all practical purposes the maximum allowable pondage for grading work should not exceed 10 per cent and for top yields should be less than one per cent. From observations of the Westover plantation test area, wherever heavy pondage occurred (pockets) there were skips in the stands. It is the writers opinion that the high yields of the Smithfield area are partially due to the better stand of cane secured on well drained land.

V. From this years results the increased returns more than offset the cost of the work:

*Increased Returns*

| Area | Cane Basis | | Sugar Basis | | Plantation Cost of Work |
|---|---|---|---|---|---|
| | Standard Tons | Value | Pounds | Value | |
| **Smithfield** | | | | | |
| Average | 5.09 | 39.35 | 1394 | 76.67 | 15.00* |
| Maximum | 6.30 | 45.05 | 1650 | 90.75 | 15.00 |
| **Westover** | | | | | |
| Average | 5.39 | 38.54 | ---- | ----- | 18.75** |
| Maximum | 13.28 | 94.25 | ---- | ----- | 30.00*** |

* The costs in last years report for maximum efficiency was $7.30 for Parsons whirlwind terracer and $11.72 for dozer and grader combinations. It is estimated that plantation costs will be approximately $15.00 per acre.

** Included in the average figures is the moving of earth along canal.

*** The costs for working the maximum yield area. Along a canal with maximum efficiency was $25.27 per acre. It is estimated that plantation cost will be approximately $30.00 per acre.

## Additional Test Areas and Miscellaneous Cut Crowning Information for 1948

*Cinclare Test Area*

This is a black land area consisting of eight cuts. Six of the cuts were graded into three cuts to study the feasibility of widening cuts in conjunction with cut crowning. The cuts were originally 13 row cuts. The cuts are now 27 row cuts gaining an extra row where the ditch was located.

*Westover Test Area* #3

Three cuts were graded with three cuts left as checks. Attempts were made to plant two of them flat. The plantation equipment which was used did not make large enough furrows to accommodate the cane. In order to get sufficient earth to cover the cane a low middle was formed. The need for the earth was to get sufficient coverage to keep the cane from freezing.

This spring this earth can be removed and the area kept flat. The Agricultural Engineering Department of Louisiana Experiment Station are cooperating on flat cultivation to see if it has any effect on drainage; also if it is feasible to flat cultivate without quarter drains.

*Westover Test Area* #4

This area consists of 260 acres. A topographic survey has been completed of the area. This area will be used during the season of 1949

for further experimental work on cut crowning.

*Equipment*

Late in the fall two additional types of equipment were purchased, a four cubic yard scraper and a small land leveler. Precision of grading is showing up as a big factor in the work. This equipment is made for precision work. Trial runs were made during the fall of 1948. Further work will be done with this equipment to determine costs, techniques, and methods of doing the work.

*Acceptance of the Practice*

One company has set up a program of grading 1000 acres per year. The sugar cane specialists of the Extension Service estimate that approximately 70,000 acres have been graded to date.

### Lateral Ditches and Mole Drainage

*Westover Test Area #2*

A test area was set up on Westover plantation to study the maximum ditch spacing or cut width to be used on mixed land and maintain yields. The test area is laid out as follows: 20, 30, 40, and 50 row cuts. The area was planted to cane the fall of 1948.

*Equipment*

In the fall of 1948 a Chattin ditcher was received at the project. Trial runs were made on two ditches. At the present time the machine is being revamped to adapt it to Louisiana conditions, also to mount it on the rear of a crawler tractor.

*Mole Drainage*

It has been brought out in previous reports that one of the limiting factors in mole drainage is a machine adapted to our conditions. A machine has been developed at the project with the following features:

(1) It is simple.

(2) Depth can be changed while operating.

(3) Beam lengthens as depth is increased so point of machine runs right.

(4) Point maintains a constant pitch.

(5) Mobile.

(6) Beam has sufficient length to bridge over small depressions.

(7) Constructs a well compacted mole channel.

With the development of this machine we are now in a position to carry on our mole drainage experiments, such as adaptability to Louisiana conditions and allied information as to spacing, depth, etc.

At the time of writing this report, drawings are being prepared for the securing of patents.

We wish to refer you to SCS photographs #79202, 79203, 79204, 79205, 79198, 79199, 79197, copies of which were not available at the time of writing this report.

———o———

## CONTACT COMMITTEE TO MEET ON JUNE 15th.

Mr. Stephen C. Munson, Chairman of the Contact Committee of the American Sugar Cane League, has called a meeting of his Committee for 10 A. M. on Wednesday, June 15th in the Auditorium of the Federal Experiment Station, Houma, La.

The main purpose of the meeting is to discuss new unreleased varieties of sugarcane and to decide on any releases to be made this year.

The reports of the various Federal scientists will also be released and discussed.

This is an open meeting that all sugarcane farmers interested in better sugarcane varieties should attend.

A meeting of the sub-committee of the Contact Committee was held in Mr. Munson's office in Jeanerette on May 18th for a preliminary discussion of the unreleased varieties and to prepare recommendations to be submitted to the general meeting on June 15th for final action.

# Kill Alligator Weed Let the Cane Grow!

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# SUGAR BULLETINS

Col. C. J. Bourg, manager of the Washington Office of the American Sugar Cane League, is back in his office after a "very enjoyable and instructive" visit to Puerto Rico. Mr. Bourg was greatly impressed with an overhead sprinkling system that is being tried out in the cane fields at Central Aguirre. He believes that it may be possible to use a similar system in Louisiana.

*2-Way Radio*

The Executive Committee of the American Sugar Cane League has approved the purchase of a two-way portable radio for use in either an automobile or a truck to communicate with airplanes in cloud seeding rain making experiments. Mr. Chas. A. Farwell recommended the purchase of a set to assist the U. S. Department of Agriculture in rain making experiments that will be conducted in this territory during the summer months. (See the June 1st issue of *The Sugar Bulletin.*)

*Sugar Consumption*

The Bureau of Agricultural Economics of the USDA reports that civilians in the U. S. consumed 7,500,000 tons of sugar, raw value, in 1948 which is equivalent to a per capita consumption of 96 pounds of refined sugar. The 1949 consumption is not expected to be as high as that of last year but neither is the available supply.

*Prices Higher*

The USDA also reports that prices for sugar were higher in the first quarter of 1949 ending March 31st than during the same period in 1948. In March 1948 raw sugar prices in New York averaged 5.42 cents per pound and refined sugar averaged 7.75 cents per pound. In March of this year the raw sugar price averaged 5.68 cents a pound and the refined price averaged 7.96 cents a pound. The USDA expects sugar prices to continue to be higher this year than they were in 1948.

*Meeting Scheduled*

June 15th is the day that Mr. Stephen C. Munson, Chairman of the League's Contact Committee, has selected for the meeting of his Committee to pass on the release of cane varieties for commercial plantings this fall. The meeting will be held at the Houma Experiment Station beginning at 10 o'clock in the morning and the public is invited.


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## IN WASHINGTON

(Continued from page 253)

modity Credit Corporation and the British Ministry of Food of a total quantity of 750,000 long tons (approximately 850,000 short tons) of raw sugar from the Institute. Under this arrangement the British Ministry of Food will purchase 350,000 long tons and CCC will purchase 400,000 long tons, including 5 cargoes (approximately 50,000 long tons) already delivered to CCC by the Institute.

(Continued on Page 262)

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## NOTICE

### Help Wanted and Position Wanted Listings

In order to facilitate the securing of personnel for the Louisiana Sugar Industry *The Sugar Bulletin* will carry HELP WANTED and POSITION WANTED listings free of charge, space permitting.

Please mail your listings to Mr. Marcel J. Voorhies, Editor, *The Sugar Bulletin*, 414 Whitney Building, New Orleans 12, La.

### POSITION WANTED

**(Listings carried free of charge, space permitting)**

Mr. Rodney Webre, son of sugar cane farmer, ex-service man, highly recommended as overseer by South Coast Corporation, desires a position as overseer. Mr. Webre is also a qualified welder. He is 25 years old, married and has one child. Mr. Webre's address is Montegut, Louisiana.

## IN WASHINGTON

(Continued from page 260)

The agreement provides that the first 100,000 long tons for the Ministry and 150,000 long tons for CCC will be purchased at a price of 4 cents per English pound, and that the price of the remaining 500,000 long tons shall be determined, within the upper limit of 4 cents per pound, by the average monthly spot price for Cuban free world sugar, as reported by the New York Coffee and Sugar Exchange, for the months of July to November 1949, inclusive.

In consideration of the fact that the quota of 600,000 long tons (approximately 680,000 short tons) originally established by the Cuban Government for the world market has been sold, the Cuban Sugar Stabilization Institute will increase such export quota by 250,000 long tons (approximately 280,000 short tons), the amount which is considered necessary to meet current requirements of the world market.

The sugar purchased by CCC will be utilized by the Army for civilian feeding in the occupied areas and by certain countries receiving aid from the Economic Cooperation Administration. The usual contracts embodying these purchases will be executed in the near future.

## FORMULAS

(Continued from page 252)

**CALIBRATION TABLE FOR SPECIFIC NUMBER OF GALLONS PER ACRE**
**(Teejet Nozzles)***

$$\text{Formula: m.p.h.} = \frac{495 \times \text{g.p.m. per nozzle}}{\text{Nozzle spacing in feet} \times \text{gallons per acre}}$$

| Rate per acre, gallons | Rate per 1/100 A. c. c. | Nozzle No. | Nozzle orifice Inch | Nozzle delivery g.p.m. | Nozzle spacing | | Pressure, sq. in. | Forward speed of sprayer | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | in. | ft. | | Miles per hour | Feet per min. | Inches per sec. |
| 10 | 378.4 | 8001 | .020 | .09 | 12 | 1.0 | 30 | 4.46 | 392.48 | 78.50 |
| | | | | | 15 | 1.25 | 30 | 3.56 | 313.28 | 62.66 |
| | | | | | 18 | 1.5 | 30 | 2.97 | 261.36 | 52.27 |
| 10 | 378.4 | 8001 | .020 | .10 | 12 | 1.0 | 40 | 4.95 | 435.60 | 87.12 |
| | | | | | 15 | 1.25 | 40 | 3.96 | 348.48 | 69.70 |
| | | | | | 18 | 1.5 | 40 | 3.30 | 290.40 | 58.08 |
| 25 | 946.0 | 8002 | 1/32 | .17 | 12 | 1.0 | 30 | 3.37 | 296.56 | 59.31 |
| | | | | | 15 | 1.25 | 30 | 2.69 | 236.72 | 47.34 |
| | | | | | 18 | 1.5 | 30 | 2.24 | 197.12 | 39.42 |
| 25 | 946.0 | 8002 | 1/32 | .20 | 12 | 1.0 | 40 | 3.96 | 348.48 | 69.70 |
| | | | | | 15 | 1.25 | 40 | 3.17 | 278.96 | 55.79 |
| | | | | | 18 | 1.5 | 40 | 2.64 | 232.32 | 46.46 |
| 50 | 1892.0 | 8004 | 3/64 | .35 | 12 | 1.0 | 30 | 3.47 | 305.36 | 61.07 |
| | | | | | 15 | 1.25 | 30 | 2.77 | 243.76 | 48.75 |
| | | | | | 18 | 1.5 | 30 | 2.31 | 203.28 | 40.66 |
| 50 | 1892.0 | 8004 | 3/64 | .40 | 12 | 1.0 | 40 | 3.96 | 348.48 | 69.70 |
| | | | | | 15 | 1.25 | 40 | 3.17 | 278.96 | 55.79 |
| | | | | | 18 | 1.5 | 40 | 2.64 | 232.32 | 46.46 |
| 100 | 3784.0 | 8010 | 5/64 | .86 | 12 | 1.0 | 30 | 4.26 | 374.88 | 74.98 |
| | | | | | 15 | 1.25 | 30 | 3.41 | 300.08 | 60.02 |
| | | | | | 18 | 1.5 | 30 | 2.84 | 249.92 | 49.98 |
| 100 | 3784.0 | 8010 | 5/64 | 1.0 | 12 | 1.0 | 40 | 4.95 | 435.60 | 87.12 |
| | | | | | 15 | 1.25 | 40 | 3.96 | 348.48 | 69.70 |
| | | | | | 18 | 1.5 | 40 | 3.30 | 290.40 | 58.08 |

* This table is calculated on the basis of Spraying Systems Teejet Nozzles. The same applies to the Monarch or any other make of nozzle with similar orifice sizes.

# USE 99% *Pure Sodium Chlorate*

## PLUS

## *Calcium Chloride*

## For Better and Cheaper Johnson Grass Control

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Pure Sodium Chlorate is the Oldest and Best Johnson Grass Killer known. The State of Kansas alone have been using over 3,000,000 lbs. of it for weed control each year for the past 10 years. Louisiana sugar cane farmers have used it with excellent results.

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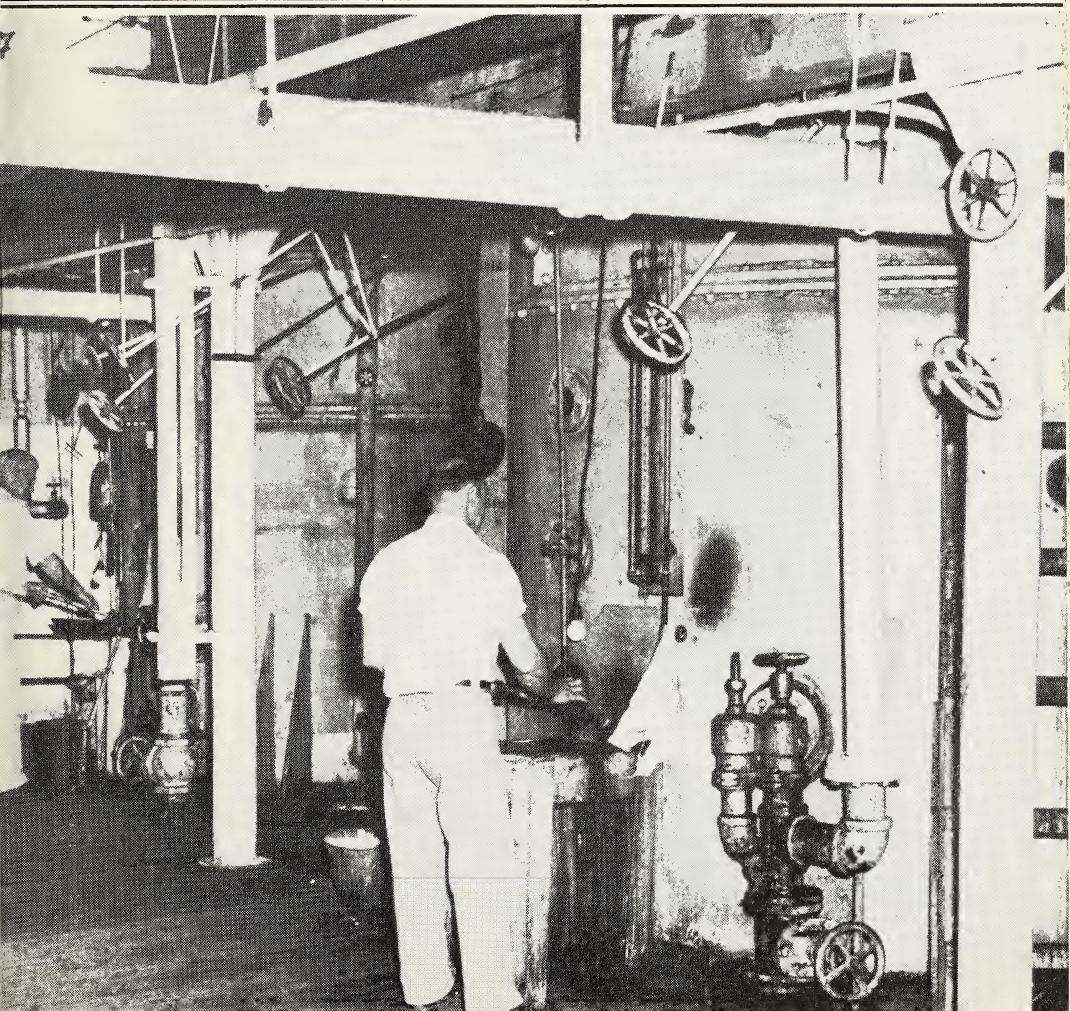

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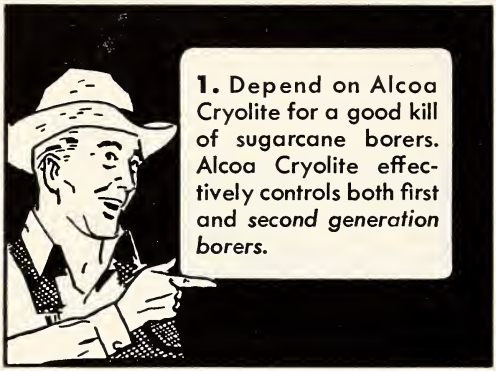

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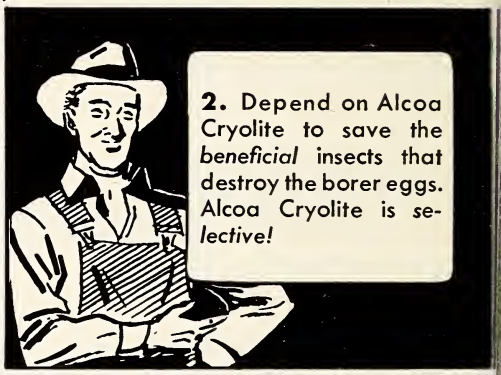

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414 Whitney Bldg., New Orleans 12

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# IN WASHINGTON WITH C. J. BOURG

Mr. Ody Lamborn and his statistician, Mr. Sam Schoenfeld, have made available to us some very interesting figures on prices. They have presented raw sugar average prices from 1913 through 1948, by months, and also a table for similar average prices on refined sugar for the same period and granulated sugar average retail prices in the United States from 1913 to date.

We are very grateful to Lamborn & Company for this opportunity to present these figures in consolidated form for the study and review of our readers. In examining these average prices throughout two World Wars and the period following each, there should be a better appreciation of the value of the Sugar Act of 1948 in protecting domestic producers and the steadfast determination of Secretary Brannan to administer the law as it is written.

**RAW SUGAR AVERAGE PRICES—UNITED STATES—1913-1948**
**(Cost and Freight Basis at New York)**

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (In cents per pound) | | | | | | | |
| 1913 | 2.22 | 1.94 | 2.17 | 2.03 | 1.98 | 2.03 | 2.21 | 2.36 | 2.26 | 2.14 | 2.27 | 2.36 | 2.16 |
| 1914 | 2.35 | 2.44 | 1.99 | 1.99 | 2.24 | 2.33 | 2.28 | 4.33 | 4.68 | 3.30 | 3.00 | 3.02 | 2.83 |
| 1915 | 3.04 | 3.51 | 3.74 | 3.80 | 3.85 | 3.91 | 3.50 | 3.70 | 3.29 | 3.11 | 3.76 | 3.91 | 3.59 |
| 1916 | 3.66 | 3.96 | 4.60 | 5.21 | 5.44 | 5.37 | 5.23 | 4.61 | 4.43 | 5.27 | 5.16 | 4.41 | 4.78 |
| 1917 | 4.14 | 4.16 | 4.53 | 5.20 | 5.10 | 5.18 | 5.65 | 6.19 | 5.94 | 5.83 | 5.72 | 5.00 | 5.22 |
| 1918 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.03 | 5.05 | 5.66 | 6.28† | 6.28 | 6.28 | 6.28 | 5.49 |
| 1919 | 6.28 | 6.28 | 6.28 | 6.28 | 6.28 | 6.28 | 6.28 | 6.28 | 6.28 | 6.28 | 6.28 | 10.66 | 6.65 |
| 1920 | 11.76 | 10.29 | 10.98 | 16.15 | 20.58 | 18.28 | 16.55 | 13.09 | 9.14 | 7.39 | 5.60 | 4.15 | 11.35 |
| 1921 | 4.11 | 4.47 | 5.14 | 4.51 | 3.87 | 2.96 | 2.85 | 3.08 | 2.60 | 2.51 | 2.26 | 2.01 | 3.36 |
| 1922 | 2.03 | 2.11 | 2.31 | 2.40 | 2.46 | 3.00 | 3.51 | 3.58 | 3.24 | 3.69 | 3.83 | 3.90 | 3.01 |
| 1923 | 3.52 | 4.52 | 5.75 | 6.02 | 6.21 | 5.80 | 5.36 | 4.25 | 5.17 | 5.79 | 5.43 | 5.52 | 5.28 |
| 1924 | 4.88 | 5.46 | 5.14 | 4.59 | 3.83 | 3.40 | 3.34 | 3.57 | 4.16 | 4.24 | 4.04 | 3.42 | 4.17 |
| 1925 | 2.83 | 2.86 | 2.98 | 2.71 | 2.56 | 2.63 | 2.49 | 2.59 | 2.44 | 2.07 | 2.30 | 2.34 | 2.57 |
| 1926 | 2.39 | 2.45 | 2.26 | 2.35 | 2.41 | 2.36 | 2.38 | 2.47 | 2.68 | 2.80 | 2.93 | 3.31 | 2.57 |
| 1927 | 3.25 | 3.14 | 3.01 | 2.99 | 3.05 | 2.84 | 2.75 | 2.75 | 3.02 | 2.89 | 2.86 | 2.82 | 2.95 |
| 1928 | 2.72 | 2.48 | 2.74 | 2.66 | 2.68 | 2.52 | 2.42 | 2.38 | 2.22 | 2.14 | 2.09 | 2.16 | 2.43 |
| 1929 | 2.03 | 1.96 | 1.94 | 1.87 | 1.81 | 1.75 | 2.10 | 2.05 | 2.21 | 2.24 | 1.95 | 1.99 | 1.99 |
| 1930 | 1.94 | 1.82 | 1.82 | 1.67 | 1.44 | 1.40 | 1.27 | 1.18 | 1.14 | 1.28 | 1.41 | 1.29 | 1.47 |
| 1931 | 1.37 | 1.31 | 1.28 | 1.29 | 1.18 | 1.32 | 1.49 | 1.46 | 1.41 | 1.41 | 1.35 | 1.14 | 1.33 |
| 1932 | 1.13 | .94 | .77 | .63 | .59 | .75 | 1.04 | 1.14 | 1.14 | 1.13 | 1.06 | .84 | .93 |
| 1933 | .72 | .74 | .96 | 1.12 | 1.31 | 1.39 | 1.54 | 1.48 | 1.60 | 1.35 | 1.22 | 1.21 | 1.22 |
| 1934 | 1.20 | 1.33 | 1.11 | .78 | .78 | 1.32 | 1.67 | 1.74 | 1.98 | 2.00 | 2.04 | 2.05 | 1.50 |
| 1935 | 1.89 | 1.99 | 2.13 | 2.34 | 2.38 | 2.42 | 2.35 | 2.39 | 2.60 | 2.72 | 2.52 | 2.23 | 2.33 |
| 1936 | 2.37 | 2.45 | 2.64 | 2.85 | 2.82 | 2.85 | 2.80 | 2.78 | 2.65 | 2.47 | 2.74 | 2.90 | 2.69 |
| 1937 | 2.96 | 2.66 | 2.59 | 2.56 | 2.50 | 2.51 | 2.57 | 2.65 | 2.49 | 2.27 | 2.42 | 2.33 | 2.54 |
| 1938 | 2.31 | 2.25 | 2.14 | 1.96 | 1.83 | 1.79 | 1.88 | 1.80 | 2.08 | 2.19 | 2.14 | 1.97 | 2.04 |
| 1939 | 1.88 | 1.87 | 1.93 | 2.02 | 2.01 | 1.95 | 1.99 | 1.95 | 2.32 | 1.94 | 1.46 | 1.53 | 1.90 |
| 1940 | 1.95 | 1.93 | 1.92 | 1.94 | 1.80 | 1.80 | 1.78 | 1.74 | 1.80 | 1.90 | 1.98 | 2.01 | 1.89 |
| 1941 | 2.03 | 2.10 | 2.40 | 2.45 | 2.48 | 2.58 | 2.60 | 2.70 | 2.60 | 2.60 | 2.60 | 2.60 | 2.48 |
| 1942 | 2.96 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 |
| 1943 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 |
| 1944 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 |
| 1945 | 3.23 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 | 3.44 | 3.42 |
| 1946* | 4.03 | 4.07 | 4.12 | 4.19 | 4.19 | 4.19 | 4.90 | 4.90 | 4.90 | 5.28 | 5.28 | 5.28 | 4.61 |
| 1947§ | 5.41 | 5.41 | 5.41 | 5.47 | 5.47 | 5.47 | 5.47 | 5.47 | 5.47 | 5.47 | 5.47 | 5.47 | 5.46 |
| 1948‡ | 5.15 | 5.01 | 4.92 | 4.85 | 4.64 | 4.85 | 5.20 | 5.28 | 5.16 | 5.16 | 5.18 | 5.17 | 5.05 |

† The 6.28c figure includes approximately .40c added to the C. & F. price by the U. S. Sugar Equalization Board, a government agency.

* Based on actual f.o.b. price paid plus ocean freight and insurance. The Commodity Credit Corporation purchased the 1946 Cuban sugar crop at a basic minimum price of 3.675c per pound f.o.b. Cuban ports. This price was increased starting with the second quarter of 1946, because of the "escalator" clause in the contract pertaining to the food price index of the U. S. Bureau of Labor Statistics. In the second quarter, the increase amounted to .079c; the third quarter, .787c; and the fourth quarter, 1.159c.

§ Based on actual price paid by Commodity Credit Corporation plus ocean freight and insurance.

‡ Cost, Insurance, and Freight (C.I.F.) Basis.

## REFINED SUGAR AVERAGE PRICES—UNITED STATES—1913-1948

### (Net Cash at New York—Excluding Excise Tax†)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (In cents per pound) | | | | | | | |
| 1913 | 4.54 | 4.19 | 4.19 | 4.11 | 4.10 | 4.13 | 4.45 | 4.59 | 4.54 | 4.20 | 4.21 | 4.12 | 4.28 |
| 1914 | 3.92 | 3.92 | 3.84 | 3.72 | 3.90 | 4.16 | 4.21 | 6.13 | 6.80 | 5.97 | 4.99 | 4.84 | 4.68 |
| 1915 | 4.87 | 5.43 | 5.73 | 5.78 | 5.87 | 5.87 | 5.86 | 5.51 | 5.13 | 4.96 | 5.68 | 6.15 | 5.56 |
| 1916 | 5.74 | 5.99 | 6.59 | 7.02 | 7.46 | 7.33 | 7.50 | 6.98 | 6.39 | 7.09 | 7.35 | 6.99 | 6.86 |
| 1917 | 6.62 | 6.86 | 7.41 | 8.11 | 8.00 | 7.37 | 7.49 | 8.20 | 8.23 | 8.18 | 8.18 | 8.04 | 7.66 |
| 1918* | 7.40 | 7.30 | 7.30 | 7.30 | 7.30 | 7.31 | 7.35 | 7.35 | 8.51* | 8.82 | 8.82 | 8.82 | 7.83 |
| 1919* | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 10.92 | 9.00 |
| 1920 | 14.82 | 14.70 | 13.72 | 16.07 | 19.31 | 21.47 | 21.56 | 18.35 | 14.26 | 11.05 | 9.56 | 8.11 | 15.25 |
| 1921 | 7.56 | 7.33 | 7.85 | 7.31 | 6.32 | 5.71 | 5.49 | 5.83 | 5.54 | 5.21 | 5.17 | 5.01 | 6.19 |
| 1922 | 4.80 | 4.93 | 5.20 | 5.21 | 5.28 | 5.87 | 6.52 | 6.71 | 6.24 | 6.60 | 6.80 | 6.94 | 5.93 |
| 1923 | 6.64 | 7.44 | 8.57 | 9.10 | 9.45 | 9.24 | 8.47 | 7.51 | 8.20 | 8.90 | 8.68 | 8.81 | 8.41 |
| 1924 | 8.22 | 8.50 | 8.42 | 7.89 | 7.11 | 6.43 | 6.42 | 6.48 | 7.00 | 7.06 | 7.13 | 7.10 | 7.31 |
| 1925 | 6.04 | 5.83 | 5.87 | 5.64 | 5.46 | 5.41 | 5.24 | 5.27 | 5.33 | 4.94 | 5.10 | 5.25 | 5.45 |
| 1926 | 5.11 | 5.15 | 4.96 | 5.21 | 5.43 | 5.44 | 5.56 | 5.53 | 5.61 | 5.72 | 5.74 | 6.10 | 5.46 |
| 1927 | 6.15 | 5.92 | 5.80 | 5.79 | 5.91 | 5.98 | 5.91 | 5.57 | 5.72 | 5.68 | 5.57 | 5.52 | 5.79 |
| 1928 | 5.68 | 5.54 | 5.64 | 5.82 | 5.85 | 5.89 | 5.65 | 5.48 | 5.41 | 5.12 | 5.06 | 5.15 | 5.52 |
| 1929 | 5.00 | 4.89 | 4.79 | 4.80 | 4.86 | 4.86 | 5.15 | 5.39 | 5.30 | 5.37 | 5.04 | 4.94 | 5.03 |
| 1930 | 4.87 | 4.85 | 4.87 | 4.78 | 4.74 | 4.48 | 4.61 | 4.37 | 4.34 | 4.41 | 4.61 | 4.57 | 4.62 |
| 1931 | 4.58 | 4.46 | 4.32 | 4.39 | 4.29 | 4.38 | 4.58 | 4.62 | 4.46 | 4.49 | 4.42 | 4.18 | 4.43 |
| 1932 | 4.08 | 4.07 | 3.98 | 3.81 | 3.68 | 3.73 | 3.94 | 4.09 | 4.17 | 4.12 | 4.15 | 4.07 | 3.99 |
| 1933 | 3.86 | 3.82 | 4.01 | 4.21 | 4.41 | 4.49 | 4.57 | 4.61 | 4.57 | 4.51 | 4.43 | 4.30 | 4.32 |
| 1934 | 4.21 | 4.34 | 4.41 | 4.32 | 4.10 | 4.04 | 4.12 | 4.12 | 4.12 | 4.03 | 3.91 | 3.75 | 4.12 |
| 1935 | 3.68 | 3.68 | 3.76 | 4.34 | 4.61 | 4.61 | 4.52 | 4.46 | 4.52 | 4.66 | 4.62 | 4.34 | 4.32 |
| 1936 | 4.61 | 4.56 | 4.65 | 4.90 | 4.90 | 4.90 | 4.73 | 4.63 | 4.61 | 4.49 | 4.62 | 4.70 | 4.69 |
| 1937 | 4.89 | 4.90 | 4.70 | 4.70 | 4.67 | 4.55 | 4.61 | 4.61 | 4.46 | 4.26 | 4.14 | 4.12 | 4.55 |
| 1938 | 4.12 | 4.12 | 4.03 | 3.95 | 4.02 | 3.88 | 3.81 | 3.68 | 3.93 | 4.01 | 3.92 | 3.87 | 3.95 |
| 1939 | 3.71 | 3.68 | 3.77 | 3.81 | 3.88 | 3.88 | 3.80 | 3.78 | 5.08 | 4.73 | 4.26 | 4.07 | 4.04 |
| 1940 | 3.91 | 3.88 | 3.88 | 3.88 | 3.88 | 3.84 | 3.73 | 3.73 | 3.73 | 3.73 | 3.73 | 3.74 | 3.80 |
| 1941 | 3.78 | 3.83 | 4.24 | 4.46 | 4.41 | 4.37 | 4.41 | 4.67 | 4.65 | 4.61 | 4.61 | 4.61 | 4.39 |
| 1942 | 4.76 | 4.81 | 4.81 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.91 |
| 1943 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 |
| 1944 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.86 | 4.86 | 4.86 | 4.86 | 4.92 |
| 1945 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 | 4.86 |
| 1946 | 4.86 | 5.17 | 5.35 | 5.35 | 5.35 | 5.37 | 5.44 | 5.44 | 6.10 | 6.91 | 7.07 | 7.31 | 5.81 |
| 1947 | 7.40 | 7.50 | 7.50 | 7.55 | 7.55 | 7.55 | 7.55 | 7.68 | 7.70 | 7.70 | 7.70 | 7.70 | 7.59 |
| 1948 | 7.52 | 7.10 | 7.01 | 7.00 | 6.86 | 6.81 | 7.05 | 7.02 | 7.01 | 7.01 | 7.04 | 7.06 | 7.04 |

* The U. S. Food Administration on September 6, 1918, announced the stabilization of a basis price of 9 cents per pound for refined sugar (8.82 net cash) effective September 9, 1918. This quotation remained in effect until December 20, 1919.

† Under the Jones-Costigan Act, a processing tax of .535 cents per pound was instituted on June 8, 1934 and was eliminated on January 6, 1936 by U. S. Supreme Court decision. Under the Sugar Act of 1937, an excise tax of .535 cent per pound became effective on September 1, 1937, and continued by the Sugar Act of 1948.

1949 (Preliminary) (Exclusive of Tax)

January 7.30 February 7.31 March 7.26 April 7.40

## GRANULATED SUGAR AVERAGE RETAIL PRICES—UNITED STATES

The table below, giving the average prices of granulated sugar on the 15th of each month, or the date nearest the 15th, for the period 1913 to 1948, inclusive, was compiled from data supplied by the Bureau of Labor Statistics of the U. S. Department of Labor. In the preparation of the averages, the prevailing price of granulated sugar during the first four days of the week containing the 15th of the month in 56 large cities throughout the United States was taken.

## GRANULATED SUGAR AVERAGE RETAIL PRICE ON 15th OF EACH MONTH 1913 TO 1948

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug | Sept. | Oct. | Nov. | Dec. | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (In cents per pound) | | | | | | | |
| 1913 | 5.8 | 5.5 | 5.4 | 5.4 | 5.4 | 5.3 | 5.5 | 5.6 | 5.7 | 5.5 | 5.4 | 5.4 | 5.5 |
| 1914 | 5.2 | 5.2 | 5.1 | 5.0 | 5.0 | 5.1 | 5.2 | 7.9 | 8.0 | 7.2 | 6.2 | 6.1 | 5.9 |
| 1915 | 6.0 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 7.0 | 6.7 | 6.5 | 6.1 | 6.6 | 6.8 | 6.6 |
| 1916 | 6.7 | 6.9 | 7.5 | 8.0 | 8.6 | 8.7 | 8.8 | 8.5 | 7.7 | 8.2 | 8.6 | 8.3 | 8.0 |
| 1917 | 8.0 | 8.1 | 8.8 | 9.6 | 10.1 | 9.4 | 9.2 | 10.0 | 9.9 | 9.8 | 9.6 | 9.5 | 9.3 |
| 1918 | 9.5 | 10.6 | 9.2 | 9.1 | 9.1 | 9.1 | 9.2 | 9.3 | 9.6 | 10.6 | 10.8 | 10.8 | 9.7 |
| 1919 | 10.8 | 10.7 | 10.6 | 10.6 | 10.6 | 10.6 | 10.9 | 11.1 | 11.0 | 11.4 | 12.5 | 14.5 | 11.3 |
| 1920 | 17.8 | 18.8 | 18.7 | 20.2 | 25.4 | 26.7 | 26.5 | 22.9 | 18.3 | 13.9 | 12.8 | 10.5 | 19.4 |
| 1921 | 9.7 | 8.9 | 9.7 | 9.7 | 8.4 | 7.8 | 7.1 | 7.5 | 7.3 | 6.9 | 6.7 | 6.5 | 8.0 |
| 1922 | 6.2 | 6.4 | 6.5 | 6.7 | 6.6 | 7.1 | 7.6 | 8.1 | 7.9 | 7.9 | 8.1 | 8.3 | 7.3 |
| 1923 | 8.3 | 8.7 | 10.2 | 10.6 | 11.2 | 11.1 | 10.5 | 9.6 | 9.6 | 10.6 | 10.3 | 10.4 | 10.1 |
| 1924 | 10.2 | 10.3 | 10.4 | 9.9 | 9.2 | 8.3 | 8.4 | 8.2 | 8.6 | 8.8 | 8.8 | 8.8 | 9.2 |
| 1925 | 8.1 | 7.7 | 7.7 | 7.5 | 7.2 | 7.2 | 7.1 | 7.0 | 7.0 | 6.8 | 6.6 | 6.7 | 7.2 |
| 1926 | 6.7 | 6.7 | 6.7 | 6.6 | 6.7 | 6.9 | 6.9 | 7.0 | 7.0 | 7.1 | 7.1 | 7.3 | 6.9 |
| 1927 | 7.5 | 7.5 | 7.4 | 7.3 | 7.3 | 7.3 | 7.4 | 7.3 | 7.2 | 7.2 | 7.2 | 7.1 | 7.3 |
| 1928 | 7.1 | 7.1 | 7.1 | 7.1 | 7.2 | 7.3 | 7.3 | 7.1 | 7.0 | 6.9 | 6.8 | 6.7 | 7.1 |
| 1929 | 6.7 | 6.6 | 6.5 | 6.4 | 6.4 | 6.4 | 6.4 | 6.6 | 6.7 | 6.7 | 6.7 | 6.6 | 6.6 |
| 1930 | 6.6 | 6.5 | 6.4 | 6.3 | 6.3 | 6.1 | 6.1 | 6.1 | 5.9 | 5.8 | 5.9 | 5.9 | 6.2 |
| 1931 | 5.9 | 5.9 | 5.8 | 5.7 | 5.6 | 5.6 | 5.6 | 5.7 | 5.7 | 5.6 | 5.6 | 5.5 | 5.7 |
| 1932 | 5.4 | 5.3 | 5.2 | 5.1 | 4.9 | 4.9 | 5.0 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 1933 | 5.1 | 5.0 | 5.0 | 5.1 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 5.7 | 5.6 | 5.5 | 5.4 |
| 1934 | 5.4 | 5.6 | 5.4 | 5.5 | 5.4 | 5.4 | 5.7 | 5.7 | 5.7 | 5.7 | 5.6 | 5.5 | 5.5 |
| 1935 | 5.4 | 5.4 | 5.4 | 5.5 | 5.7 | 5.7 | 5.8 | 5.8 | 5.8 | 5.8 | 5.9 | 5.8 | 5.7 |
| 1936 | 5.7 | 5.6 | 5.5 | 5.5 | 5.6 | 5.6 | 5.7 | 5.7 | 5.6 | 5.6 | 5.5 | 5.5 | 5.6 |
| 1937 | 5.6 | 5.7 | 5.7 | 5.7 | 5.7 | 5.6 | 5.5 | 5.5 | 5.7 | 5.8 | 5.6 | 5.6 | 5.6 |
| 1938 | 5.5 | 5.5 | 5.5 | 5.4 | 5.4 | 5.3 | 5.3 | 5.21 | 5.13 | 5.14 | 5.16 | 5.17 | 5.31 |
| 1939 | 5.15 | 5.12 | 5.11 | 5.12 | 5.14 | 5.16 | 5.18 | 5.17 | 6.44 | 6.23 | 5.83 | 5.57 | 5.43 |
| 1940 | 5.40 | 5.33 | 5.29 | 5.26 | 5.23 | 5.23 | 5.17 | 5.13 | 5.10 | 5.09 | 5.10 | 5.09 | 5.20 |
| 1941 | 5.12 | 5.16 | 5.27 | 5.62 | 5.74 | 5.77 | 5.79 | 5.85 | 6.00 | 6.04 | 6.06 | 6.14 | 5.71 |
| 1942 | 6.37 | 6.86 | 6.9 | 6.9 | 6.9 | 6.8 | 6.8 | 6.8 | 6.9 | 6.8 | 6.9 | 6.9 | 6.82 |
| 1943 | 6.9 | 6.9 | 6.9 | 6.9 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.83 |
| 1944 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.76 |
| 1945 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.6 | 6.6 | 6.7 | 6.68 |
| 1946 | 6.7 | 6.7 | 7.1 | 7.2 | 7.3 | 7.3 | 7.4 | 7.5 | 7.5 | 9.0 | 9.1 | 9.4 | 7.68 |
| 1947 | 9.5 | 9.6 | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 | 9.7 | 9.8 | 9.8 | 9.9 | 9.9 | 9.73 |
| 1948 | 9.9 | 9.5 | 9.4 | 9.4 | 9.3 | 9.2 | 9.2 | 9.3 | 9.3 | 9.3 | 9.4 | 9.3 | 9.37 |
| 1949 | 9.4 | 9.4 | 9.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

# SUGARCANE INSECT INVESTIGATION 1948

*A. L. Dugas, C. E. Smith and E. J. Concienne, Department of Entomology, Louisiana Agricultural Experiment Station*

## A Summary of Three Years Results of the Comparison of Cryolite with New and Promising Insecticides for Control of the Sugarcane Borer

(*Tables appeared in original article*)

Early investigations revealed that cryolite gave significantly better control than any of the other materials tested against the sugarcane borer. But many of the more promising insecticides have since been tested against this insect with the hope of finding a cheaper and perhaps more effective one. Benzene hexachloride, toxaphene, parathion, chlordane, Ryania, and sodium fluosilicate were compared with cryolite for borer and yellow sugarcane aphid control in numerous tests in 1946, '47 and '48.

Since the results of experiments in 1946 indicated that the organics had definite possibilities especially for the borer-aphid problem, the program of work was expanded in '47 and '48 to determine as soon as possible whether there was a place for these new chemicals and at what concentrations they would have to be used.

We feel that we have more than a sufficient amount of evidence to draw definite conclusions regarding the organics and deem it advisable to present a summary of all the results which support the fact that there is no place for any of them in the sugarcane borer control program, except perhaps for suppression of a heavy aphid infestation at a time when there would be no danger of a borer build-up from their use.

### Experimental Methods

Although the experimental methods have been given in previous reports it may be well to briefly describe them again. Experiments were conducted on first generation, second generation, and fall generations of borers in summer-planted cane. This year-around testing was necessary since certain insecticides had shown radical differences in toxicity to the different generations Three types of tests were conducted; namely, hand-gun (small plot), airplane and ground machine (large acreage).

In the small-plot tests, a randomized arrangement of plots was employed, with each treatment replicated four times. Each plot was 5-rows wide and either 60 or 72 feet long, depending upon the length of rows. The insecticides were applied with a rotary hand-gun, in the early morning before the dew dried. The rates of application approximated 11 pounds per acre per application, with four applications being applied in all first and second generation tests unless specified otherwise, and five in the tests on fall generations. Treatments were commenced with the general hatching of borer larvae.

In first generation and fall generation tests, treatments were evaluated by the number of deadhearts and the number of borer stages surviving the treatments. The deadhearts on the center three rows of each plot were cut and examined for borer stages. First generation tests were discontinued after such examinations, since the original control is erased by reinfestation of later generations originating from untreated cane. The care in tests of fall generations is, of course, killed by cold.

In second generation small-plot tests the differences in borer infestations were measured by percent-

(Continued on page 273)

# CROP NEWS BY PARISHES

## from

## COUNTY AGENTS

This issue we are again favored with reports from our friends, the county agents, who are co-operating in their usual fine manner to keep the Louisiana Sugar Industry posted on the crop developments in the various sections in which they work.

A few of the reports listed were received before the "normal" weather set in, but it is encouraging to see that all of the agents reporting look for a good cane crop this year.

**West Baton Rouge Parish.** Reporting on June 8th, O. E. Camus, county agent of West Baton Rouge Parish advised us that field work in his district was about caught up on that date. Mr. Camus stated that the work of fertilizing the canes was also about normal but that the crop needed rain. He expects most of the canes to be laid-by by the 20th of June. The prospects for the crop at this time in his district are good.

**St. John Parish.** In another report dated June 8th V. O. Calandro, county agent of St. John Parish, reported that as much as three inches of rain had been received in certain areas of his district but that other sections had received no rain. He stated that a general rain was badly needed on that date. Field operations in St. John Parish are up to schedule as is the job of fertilizing the crop. June 15th is the date that Mr. Calandro expects to see most of the crop laid by. The prospects for the crop are good.

**Terrebonne Parish.** The report from Richard Sonnier, county agent of Terrebonne Parish, was mailed on June 9th at which time he said that the field work in his district was up to schedule, that the fertilizer work had been completed, but that the crop needed rain. The "lay-by" he said would be "soon depending on the weather".

Mr. Sonnier says that the fertilizer situation in Terrebonne Parish was better than originally expected. The prospects for the crop at this time are good.

**Lafourche Parish.** A. J. Arceneaux, county agent of Lafourche Parish, dated his report June 9th and said that the field and fertilizer work in his Parish were up to schedule on that date. The crop, he reported, still needed rain but that the lay-by was expected to be completed about June 15th.

Stands are "very promising", Mr. Arceneaux reports, "and rapid growth has been noticed where rainfall was more plentiful."

**Iberia Parish.** W. H. Williams, county agent of Iberia Parish, has again sent in a special report. He mailed in our questionnaire card on June 9th and then changed his report the next day because of a change in the weather. Mr. William's report follows:

"The sugarcane crop is looking good at the present time. Recent rains have been very beneficial to the crop. It has rained in practically every section of the parish in the past two days. At the present time crops have had sufficient rain to promote maximum growth.

Most all sugarcane growers have completed their fertilizer operations and around 80% have completed their lay-by operations. Unless it continues to rain all of the cane in the parish will be laid-by by the 15th of the month.

At the present time the sugarcane crop condition can be considered

about a week to 10 days behind normal but with good weather from now on to harvest there is a chance it will catch up and the crop should turn out good.

Corn is showing up well in most sections of the parish. However, it is to be considered a month behind normal. If good weather conditions prevail the farmer should harvest a fair to good crop.

Cotton is doing well but is late as the farmers were not able to plant in early April when most cotton should have been planted.

Rice is doing well in the various sections of the parish. Indications are that we have around 500 to 800 acres more this year than in 1948.

In a general statement it may be said that crop conditions in Iberia Parish can be considered satisfactory when we take into consideration the adverse weather conditions we have had this spring."

**Pointe Coupee Parish.** June 15th has been picked as the time that the laying-by of the crop will be completed in Pointe Coupee Parish, but A. B. Curet reports the crop to be only fair in his district, with both field and fertilizing operations still about 15 days behind schedule on June 10th. "Our cane is small," Mr. Curet reports, "but worked up fairly well and with sufficient rain should come out". Rain seemed to be close at hand when Mr. Curet was writing his report.

**St. Mary Parish.** Field work and fertilizing operations in St. Mary Parish are now caught up, according to a report from P. J. deGravelles, county agent, dated June 11th, but the fertilization was done about 30 days late. Sufficient rain had been received when the report was written and most of the crop had already been laid-by. Mr. deGravelles states that, with weather permitting, all of the canes should be laid-by by the twenty-second of June. Borer infestation, he says, is "very heavy" in his district.

**Assumption Parish.** E. L. Lousteau, county agent of Assumption Parish, also sent in his report on June 11th. On that day he reported that the field work in his district was up to schedule and that the fertilizing of the crop had also been completed. Sufficient rain had been received and the prospects for the crop were good. The canes will probably all be laid-by by the latter part of June.

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# SUGAR BULLETINS

*Growers and Processors Meet*

A meeting of the Louisiana Grower - Processor Committee was held in the Thibodaux Agricultural Auditorium on Thursday, May 26th. The Committee discussed the cane purchase contract from 10:30 in the morning until after 6 o'clock in the evening. We understand that no definite conclusions were reached.

*Blackstrap Prices*

The USDA says that the principal reasons for the decline in blackstrap molasses prices during the last Louisiana marketing season were the abundance of offshore supplies of blackstrap and the decrease in demand for blackstrap for cattle feeding due to the 1948 bumper crop of corn and the resulting decrease in corn prices.

*New President*

Mr. Walter A. Sullivan, Sr., President of Gay-Sullivan & Co., Inc., of New Orleans, has been elected President of the Waterford Sugar Cooperative, Inc. of Killona, La. Mr. F. Evans Farwell is the Vice-President, and Mr. R. M. Murphy is the Secretary-Treasurer.

## TECHNOLOGISTS MEET JUNE 22nd

The annual sectional meetings of the Manufacturing and Agricultural Sections of the American Society of Sugar Cane Technologists will be held in the auditorium of the experiment station at Houma on June 22, 1949. Both sections will meet on the same day, one in the morning and one in the afternoon, thereby giving members who so desire an opportunity to attend both meetings with a minimum loss of time from other duties. The programs given below have been prepared by the respective Chairmen:

*Manufacturing Section, R. H. Littell, Chairman*

June 22, 9:00 A. M.

Cane Juice Clarification Problems and their Solutions by Feltus Leake and Harold Aubry.

Present Day Milling Practices in Louisiana by E. C. Niestrath.

The Effect of the Quality of Cane on Raw Sugar Factory Capacities by E. L. Dennis.

The Importance of the Purity of Normal Juice in the Manufacture of Sugar in Louisiana by R. H. Littell.

*Agricultural Section, John C. Burden, Chairman*

June 22, 1:30 P. M.

Present Day Fertilizer Practice in Louisiana by E. A. Maier.

Tractor Fuels by Roland Toups.

Study on Hybrid Corn by I. N. Arceneaux.

Informal discussions on new cane varieties and planting programs by E. S. Simon.

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## Special Statistical Issue August 15th.

The Special Statistical Issue of THE SUGAR BULLETIN has been postponed this year from the June 15th issue to the August 15th issue.

This step has been taken in order to allow the A.A.A. to include the statistics of the last grinding campaign in the various tables usually carried in this Special Statistical Issue, thereby bringing all the statistical information up-to-date.

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## INVESTIGATIONS

(Continued from page 270)

age of joints bored in the summer about three weeks after the last application of dusts and again at harvest time. This furnished a record of the initial control and of the extended control up to time of harvest. The stalks in a 5-row-foot sample on each of the center three rows in each plot were examined for joints showing external borer holes. Yield records were taken from the center three rows, and a sucrose analysis was obtained from a random 25 stalk-sample in each plot. A record on yellow sugarcane aphid populations was obtained by estimating the number of aphids in all colonies on one full length row of each plot.

In the large-scale ground machine tests the plots consisted of six full length rows, and in the plane tests were two acres or more in size. The borer infestation counts were of the same nature as those in the small-plot tests, however, the sample numbers were larger. No attempt was made to secure yield records in the large-scale experiments.

### Experiments Against First Generation Borers

First generation borers are those emerging from eggs laid by moths developing from overwintered larvae. During the period while first generation borers are emerging and developing the cane plants are small, and this fact, together with the usual light rainfall, offer optimum conditions for the application of insecticides. Perhaps for these reasons, together with certain differences in natural enemy populations and temperature conditions, certain insecticides studied in the past have given much better control of first

generation borers than of second. The dusting period for first generation control usually extends from about April 15 to May 6.

The averages of the number of deadhearts, live borers surviving treatment, and percentage control of each treatment in seven experiments conducted in '46 and '47 for control of first generation borers are shown in Table I.

In Experiment No. 1, 1946, cryolite; sodium fluosilicate, 50 percent; benzene hexachloride, 2.88 percent gamma; Ryania, 50 percent; and sabadilla, 10 percent were compared. The results show that cryolite was highly effective, resulting in a 98 percent reduction of live borers, as compared to 95 percent for the sodium fluosilicate, 91 for the benzene hexachloride, and 88 for the Ryania. The sabadilla actually resulted in a 24 percent increase in borers.

Experiments Nos. 2 and 3 were designed to compare undiluted cryolite toxaphene, 10 percent; Ryania, 50 percent; benzine hexachloride, 3 percent gamma isomer; chlordane, 5 percent; sodium fluosilicate, 50 percent; and parathion, 5 percent at two different dates of starting applications. The dusting dates in the first experiment extended from May 3 to May 23, and in the second from May 15 to May 23 with only two applications of dusts being applied in the second. When dust applications were commenced at the optimum time cryolite, benzene Hexachloride, and sodium fluosilicate reduced the number of borers by 97, 94 and 98 percent, respectively. These materials were much superior to the others. At the later starting date, the control received from all treatments, with the exception of benzene hexachloride were much lower.

The insecticides were applied by ground machine in 6-row replicated plots in Experiments 4 and 5. Although there were no significant differences between the control obtained from cryolite, 10 percent, toxaphene, 3 percent gamma isomer benzene hexachloride, and 50 percent sodium fluosilicate, the latter did give the best control. Where cryolite and 10 percent toxaphene were compared in Experiment 6, identical results were obtained. A delay in starting applications may have accounted for the low 68 percent control obtained with each of these poisons.

In Experiment 6, cryolite was compared with different concentrations of toxaphene ranging from 5 to 10 percent inclusive. The concentrations of 8, 9 and 10 percent were slightly more effective than the cryolite, although some irregularities existed because of the uneven distribution of a low borer infestation.

It is evident from the results of the seven experiments that there was no significant differences in the control of first generation borers obtained from cryolite, benzene hexachloride, toxaphene, parathion, sodium fluosilicate, and Ryania. The effectiveness of Ryania was slightly below that of the other materials.

### Experiments Against Second Generation Borers

In most instances a lower mortality of second generation borers is normally obtained because of the much taller and thicker growth of cane and the usual frequent heavy rains during the period of dusting from about June 15 to July 6. However, joints are forming on the cane plants during the second generation control period, so that the poisons protect the lower seven or eight joints from borer injury. For this reason, the damage from reinfestation by later generations is considerably less on the treated cane than is the case of first generation treatments. It is therefore possible to carry through to harvest even small-plot experiments with only a nominal loss from later generation damage, except under abnormal growing conditions. It is impossible to measure harvest time savings

from first generation control in small plots because such early control is erased by the damage from second generation reinfestation.

The second generation dusting period in 1946 extended from about June 25 to July 25 under rather normal weather conditions of frequent rainfall and relatively mild temperatures. In 1947, the dusting period extended from about June 20 to July 20. It was extremely hot and dry throughout the period, resulting in an acute stunting of the cane in most areas. Conditions in 1948 were quite similar to those of the previous year except that the dusting period was 5 to 10 days later.

The results of the ten experiments conducted over the three year period are presented in Table 2.

From the results of Experiment 1, 1946, it is evident that the initial control received from cryolite, 50 percent sodium fluosilicate, 2.88 percent gamma isomer benzene hexachloride, and 50 percent Ryania was about equal. At harvest time the borer infestation following the organic treatments had about doubled that of the cryolite and Ryania plots. This indication of what might happen following organic insecticide treatments on cane went somewhat unnoticed because of the limitations of the data of only one test. Cryolite, 50 percent sodium fluosilicate, 50 percent Ryania, and 2.88 percent gamma benzene hexachloride gave 1.57, 2.09, 1.52, and 1.39 tons per acre increases over the untreated plots. The higher strength of benzene hexachloride resulted in an excellent control of the yellow sugarcane aphid.

Experiment 2, in 1947, revealed some interesting results as to what may happen following organic insecticide treatments under certain conditions of weather and borer-natural enemy relationship.

It is evident that following treatments of cryolite, sodium fluosilicate and Ryania there were 9, 15, and 5 percent of the joints bored, respectively, in the summer or about three weeks after the last application of dust; whereas, following treatments of chlordane, benzene hexachloride, parathion, toxaphene, and cryolite—toxaphene, there were 42, 32, 23, 24, and 21 percent of the joints bored, respectively all five being greater than the 19 percent in the untreated check. There was a somewhat proportionate increase in joints bored at harvest time. It is obvious that there is a close correlation between the percentage of joints bored at harvest time for the various treatments and the corresponding sucrose content yield of cane, sugar per ton, and sugar per acre.

Cryolite, sodium fluosilicate and Ryania account for increases in yield of cane per acre of 2.33, 1.29, and 4.42 tons; in sugar per ton of 31, 31 and 40 pounds per ton of cane; and in sugar per acre of 1,120, 939, and 1,731 pounds per acre. The five organic treatments accounted for decreases in cane yield of 2.29 to 6.65 tons per acre; in sugar per ton of 8 to 32 pounds; and in sugar per acre of 493 to 1,731 pounds. All of the materials which produced an increase in borer infestations gave excellent control of the yellow sugarcane aphid. Cryolite and sodium fluosilicate accounted for a heavy build-up of aphids, while Ryania showed a tendency to hold the population down. The exceedingly high borer infestation built-up by the organics served to illustrate the tremendous losses experienced from such infestations.

Experiment 3 was designed to study the relative merits of talc and of sulphur as diluents for toxaphene and for benzene hexachloride. Cryolite and an untreated check were also included in the treatments. The two toxaphene and the two benzene hexachloride treatments resulted in an increase in borer infestation, but the ones with sulphur as the diluent produced a much higher increase than those with talc. Cryolite accounted for a very good control and

produced large increases in cane and sugar yields.

In Experiment 4, 1948, cryolite, Ryania, and sodium fluosilicate were compared with the organic materials. There were prospects of a light borer infestation in this test at the start of dust applications. The cane was rather short throughout the dusting period and suffered severe damage from reinfestation by third generation borers. None of the treatments accounted for a significant reduction in joints bored in the summer, although the cryolite treatments did show a significant control at harvest time. Benzene hexachloride accounted for a fairly good control and along with cryolite, sodium fluosilicate and Ryania gave a significant increase in cane yield, but not in yield of sugar. Chlordane was the only material that caused a significant decrease in yields of cane and sugar.

Experiments 6, 7, 8, 9, and 10 were designed to compare undiluted cryolite with various concentrations of Ryania, toxaphene, benzene hexachloride, and parathion in an effort to determine the effective concentration of each under field conditions. The last three tests which involved the organic materials were conducted in 1947 at which time there was sufficient indication that these dusts had possibilities and that there would necessarily be a need to determine the strength at which each would have to be used.

Ryania at its highest strength, 50 percent, was the only material that compared favorably with cryolite in control of the borer. Even the highest concentrations of toxaphene, benzene hexachloride and parathion were rather ineffective as compared with cryolite, so that the only interesting fact is that the lowest and the highest concentrations of the organics appeared to be superior to the intermediate ones. It may be that the lower strengths, although less effective against the borer are also less effective against the natural enemies and thereby results in better control. The highest concentrations were supposedly more effective against the borer.

Even the lower concentrations of the three organics effectively controlled the yellow sugarcane aphid, whereas, Ryania prevented a build-up.

### Large-Scale Experiments

The results of two experiments in which the dusts were applied by airplane are presented in Table 3. An attempt was made to use plot sizes sufficiently large to prevent unsatisfactory drift, but drift was apparent on at least one occasion when a slight breeze blew across the plots. The treatments were replicated four times, so the test area of each experiment involved about 75 acres.

In Experiment 1, all of the treatments including cryolite, 10 percent toxaphene, 50 percent sodium fluosilicate, and 3 percent benzene hexachloride reduced the summer joint infestation significantly below that in the checks. However, by harvest time, the infestation in the benzene hexachloride treated cane had increased to that of the untreated plots.

In Experiment 2, cryolite gave a little better initial control of the borer than toxaphene and benzene hexachloride, although none of them were significantly better than the check. Some drift of the other poisons into the cryolite plots could have reduced the effectiveness of the cryolite. However, at harvest time, the picture had changed completely and the percentage of joints bored in the different treated plots were as follows: cryolite, 22; toxaphene, 37; benzene hexachloride, 43; and the untreated checks, 29. It appears that the organics must have destroyed the natural enemies of the borer, so that the later borer generations were free to work without resistance on the short cane which was stunted from lack of moisture.

### Large Acreage Field Comparisons of Cryolite and Toxaphene

In order to obtain data on a large scale field basis, several comparisons of cryolite and 10 percent toxaphene in airplane applications were conducted for the control of first and of second generation borers. The areas treated with each of the materials ranged in size from 5 to 35 acres. Records on borer infestation were taken in comparable areas.

The results are summarized in Table 4. Against the first generation the two insecticides were about equally effective at the two locations. In a part of the area treated with chlorinated camphene on Albania plantation, not sampled for comparison purposes, there was an extremely heavy build-up of borers by harvest time. No material increase was apparent in any other instance.

Against second generation of borers, on practically every farm the organic gave only slightly less control than cryolite in the summer, but accounted for a heavy build-up of borers by harvest time.

### Experiments on Control of Fall Generations of Borers in Summer-Planted Cane

In eight tests, additional data on the various insecticides were obtained on fall generations of borers in early planted cane. This dusting period extends from about September 15 to November 1, during which time cane growth, weather conditions, and type of borer injury simulates that of the first generation period.

From the results in Table 5, it is evident that the general trend is quite similar to the results on first generation borers. The findings are so much the same in the various tests, that we need only mention the principal points without discussing the individual experiments.

Cryolite, 3 percent gamma isomer benzene hexachloride, and 50 percent Ryania were about equally ef-


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fective and superior to the other treatments. Five percent parathion, and 50 percent sodium fluosilicate ranked next in effectiveness and were all about equal. Ten percent toxaphene was somewhat less effective against fall generations than against the first generation.

Five percent parathion added to cryolite for aphid control reduced the effectiveness of the cryolite against the borer. The 2,4-D alone and parzate alone resulted in a borer increase. When 2,4-D or parzate was added to cryolite neither lowered the control from the cryolite.

It is difficult to explain why some of the materials which caused an increase in borer infestation when used against the second generation, accounted for an excellent control of fall generations.

## Summary

Benzene hexachloride, toxaphene, parathion, and chlordane have no place in the sugarcane borer control program as shown by the results of 35 field-plot experiments in 1946, '47, and '48. Although these materials showed a high toxicity to first generation and fall generation of borers, they produced significant increases of the second generation in many instances, especially in 1947. Apparently, this condition results from their injurious effect upon the natural enemies of the borer. Each effected an excellent control of the yellow sugarcane aphid in all cases. It is significant that cryolite remains the most satisfactory insecticide for control of the borer in Louisiana, and Ryania, at fifty percent strength, is only slightly inferior.

In each of the three years, these organic materials compared favorably with cryolite against first generations of borers. Similar results were obtained against fall generations. Field conditions are somewhat comparable during the two periods in that the cane is small, and the weather is cool.

Against second generation borers, the dusting period of which extends from about June 15 to July 20, the

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results were quite different. In 1946, benzene hexachloride, toxaphene, and parathion gave encouraging control of the borer. In 1947, these three organics together with chlordane accounted for either very little control or were actually responsible for a significant increase in borer infestation, and loss in yield of cane and sugar. As an example, in one test chlordane, benzene hexachloride, parathion, and toxaphene caused losses in yield of cane of 6.65, 4.88, 2.87, and 2.72 tons per acre, respectively; while cryolite, 50 percent Ryania, and 50 percent sodium fluosilicate gave increases in cane yields of 2.33, 4.42, and 1.29 tons. In 1948, the losses from the application of organics were not as large, although none of them gave consistently satisfactory control.

Over the three year period in nine tests, cryolite applications accounted for increases in yield of cane of 1.57 to 7.95 tons per acre, and increases in sugar yields of 513 to 2,284 pounds per acre.

A thorough study of various concentrations of benzene hexachloride and toxaphene indicated that the lowest and highest concentrations were more effective than the intermediate strengths.

Increases in borer infestation resulted from applications of 2,4-D and from applications of parzate.

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# THE SUGAR BULLETIN

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l. 27 NEW ORLEANS, LA., JULY 1, 1949 No. 19

# *Are You Controlling Johnson Grass As Recommended, or Are You Doing A Half-Way Job???*

THE RECOMMENDED JOHNSON GRASS CONTROL PROGRAM IS:

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From NOW until SEPTEMBER is the BEST TIME to kill Johnson Grass on ditches in the fallow plowed land with SODIUM CHLORATE and CALCIUM CHLORIDE. . . .

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THE
# SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12

MARCEL J. VOORHIES, Editor

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# IN WASHINGTON WITH C. J. BOURG

## Correspondence With Secretary Brannan

June 15, 1949

*By Congressman Boggs*

My dear Mr. Secretary:

The action of the Department in re-allocating 200,000 tons of beet sugar at this time comes as a real disappointment to me because I am afraid that the net result of it will be increased hardships for the domestic producers of sugar.

While I do not have the benefit of all the facts, I have not been informed of any emergency at this time. The market price of raw sugars is considerably below that which existed in 1947 at the time of O.P.A. decontrol, and the refined price is also considerably below the one existing at the time of decontrol.

Under Section 201 of the Sugar Act, it is reasonable to expect the price of sugar to rise to a level which would protect the domestic industry. With price factors considerably above what they were at the time of decontrol, this price should be something above the $8.40 figure for refines which prevailed at that time.

I understand that the price which our planters are guaranteed under the law is an average annual price. But I am aware that the price up to date for the first six months of 1949 has been lower. Therefore, as I interpret the law, we have a right to expect a higher price in the last six months of 1949, in order that you may fulfill your obligation to the domestic sugar industry, as written and intended by Congress.

I recognize that you have been fairly constant in your insistence upon a higher level of prices for the sugar industry since you wrote me on March 22nd, but I have no information that you might have been compelled by an emergency at this time. As I understand the Sugar Act, you should permit the price of sugar to rise considerably more in the last half of the year in order to comply with the intent of Congress, as expressed in Sugar Act Section 201.

I trust that you can give me some assurances on that score.

With best wishes and warmest personal regards, I am

Sincerely yours,
HALE BOGGS
Member of Congress

---

June 15, 1949

*By Senator Ellender*

My dear Mr. Secretary:

I note that on June 10th, you announced the domestic sugar beet area is expected to be unable to fill its 1949 quota by 200,000 short tons of sugar, raw value. It is surprising to me that you should reach such a conclusion a full month ahead of the announcement of the Crop Reporting Board as to the planted acreage expectations of beet growers.

(Continued on page 292)

# RELEASE OF NEW SUGARCANE VARIETIES C. P. 44-101 AND 44-155

In accordance with the established procedure, the three cooperating agencies which are working together in the development of improved sugarcane varieties for Louisiana, viz: the Division of Sugar Plant Investigations of the Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture, the Louisiana State Agricultural Experiment Station, and the American Sugar Cane League of the U. S. A., have jointly approved the release of C. P. 44-101 and C. P. 44-155 for commercial planting in the fall of 1949.

In field tests conducted by the United States Department of Agriculture and Louisiana State University, C. P. 44-101 has proved substantially superior to Co. 290, C. P. 34-120, 36-13, and C. P. 36-105 in indicated production of sugar per acre and has averaged slightly higher than C. P. 34-120 in indicated yield of sugar per ton of cane. It has displayed unusual vigor and given consistently good stubble crops. It is moderately resistant to inversion of sucrose. It is resistant to red rot and root rot, and has shown a trace of mosaic at two of the outfield stations.

C. P. 44-101 produces tall, relatively erect stalks, and should prove entirely satisfactory for mechanical harvesting except in extreme cases of wind-induced lodging. It is ranked in a class with C. P. 29-103 and C. P. 36-183 with respect to fiber content and milling qualities. (Millability factor 1.02.) All information available indicates that it will be a useful and widely adaptable variety.

In comparative field tests C. P. 44-155 has approximately equaled C. P. 36-105 in indicated production of sugar per acre and has maintained a slight advantage over C. P. 36-105 in indicated yield of sugar per ton of cane. It is moderately susceptible to root rot, moderately resistant to red rot, and resistant to mosaic. Among favorable qualities of this variety are relatively good milling qualities (Millability factor 1.02) and outstanding resistance to inversion of sucrose. C. P. 44-155 is approximately in a class with C. P. 34-120 and C. P. 44-101 as to adaptability to mechanical harvesting. This variety is recommended for planting on light well drained soils where it may be advantageously substituted for C. P. 29-320, and possibly C. P. 34-120 and C. P. 36-105 pending the increase of C. P. 44-101.

E. W. Brandes, *Head Pathologist in Charge, Division of Sugar Plant Investigations, U. S. Department of Agriculture.*

W. G. Taggart, *Director of Experiment Stations, State of Louisiana.*

Murphy J. Foster, *President, American Sugar Cane League of the U. S. A., Inc.*

# NOTICE!

The American Sugar Cane League has been directed by the U. S. Department of Agriculture and the Louisiana Experiment Station to undertake a fair and impartial distribution of the newly released varieties of cane known as

## C.P. 44-101 and C.P. 44-155

A number of plots of these canes are subject to this distribution. It has been grown with the understanding that those growing it shall be paid for it at the price of mill cane plus $2.00 per ton for cutting and loading it on the vehicle of the purchaser and the League is authorized by the U. S. Department of Agriculture and the Louisiana Experiment Station to charge a distribution fee of 85 cents a ton.

If you wish some of these canes please fill out and sign the application blank on the opposite page. NO OTHER FORM OF APPLICATION WILL BE ACCEPTED, AND IT MUST BE RECEIVED AT THE OFFICE OF THE AMERICAN SUGAR CANE LEAGUE 414 WHITNEY BUILDING, NEW ORLEANS 12, NOT LATER THAN SATURDAY, AUGUST 31, 1949.

In the absence at this time, of exact figures supplied by the Government on the amount of the benefit payment for 1949 the precise price of mill cane is not known. You are required to agree to pay the best approximation we can now make, $10.10 per ton or actual mill price plus benefit payments.

## Deposit of $1.00 per ton must be made with application

(You will find application blank on the opposite page. USE IT.)
Remember—

*THE LAST DAY ON WHICH APPLICATIONS WILL BE RECEIVED IS AUGUST 31, 1949.*


## The American Sugar Cane League
414 Whitney Bank Bldg.
New Orleans 12, La.

## *THE LAST DAY ON WHICH APPLICATIONS FOR SEED CANE C.P. 44-101 AND C.P. 44-155 CAN BE ACCEPTED IS AUGUST 31, 1949*

I understand that the cane will cost me a total of approximately $10.10 (ten dollars and ten cents) a ton as follows:

| | |
|---|---|
| Mill price per ton at $5.80 sugar | $ 5.97 |
| Conditional payment at 80 cents | 1.28 |
| Value of molasses to grower | 0.00 |
| Cost of cutting and loading | 2.00 |
| This sum all goes to the grower | $ 9.25 |
| Distribution fee to the American Sugar Cane League | .85 |
| TOTAL | $10.10 |

*THE LAST DAY ON WHICH APPLICATIONS FOR SEED CANE C.P. 44-101 AND C.P. 44-155 CAN BE ACCEPTED IS AUGUST 31, 1949*

**Tear Off Application Below and Mail**

---

## APPLICATION FOR SEED CANE

Date _____

To The American Sugar Cane League of the U. S. A. Inc.
Gentlemen:

I hereby apply for _____ tons of C.P. 44-101 seed cane

_____ tons of C.P. 44-155 seed cane and enclose $_____ which is a deposit of earnest money at the rate of $1.00 per ton, non-refundable (unless the cane is not tendered me). The remainder I will pay when the cane is ready to be delivered to me, and I am to be notified concerning this and supplied with the name and address of the grower from whom I am to procure the cane, which I will send for on delivery dates in September 1949. Should the cane fail to be tendered to me by that date all payments and deposits made by me are to be refunded in full on each ton not tendered.

I had _____ acres of sugarcane in 1948.

This application is made with the full understanding on my part that it may not be possible to tender to me as much cane as I apply for, owing to the limited supply.

*Name* _____

*Address* _____

# REVISED 1949 SUGAR QUOTAS

The U. S. Department of Agriculture on June 10th announced the proration of additional sugar quota Puerto Rico and Cuba in amounts of 60,635 and 139,365 short tons, raw value, respectively. These amounts of additional quota represent a total of 200,000 short tons of sugar, raw value, by which the domestic sugar beet area is expected to be unable to fill its 1949 quota. The mainland cane area, Hawaii and the Virgin Islands are expected to be able to fulfill no more than their original 1949 quotas and, therefore, are excluded from the proration of the beet area deficit.

At the same time the Department announced an increase in the local consumption requirements and quota for Puerto Rico to 100,000 short tons of sugar, raw value.

These two actions necessitate the revision of the 1949 sugar quotas for Puerto Rico for mainland and local distribution. A table indicating the revised allotments which will be effective upon publication in the Federal Register appears below. Marketings prior to September 1, 1949 are restricted to the amounts shown in Columns 2 and 4 of the table.

**(Short tons, raw value)**

| Processor | Mainland Allotment | | Local Allotment | |
|---|---|---|---|---|
| | Total (1) | 80 Percent (2) | Total (3) | 80 Percent (4) |
| Antonio Roig, Sucesores, S. en C. | 28,970 | 23,176 | 19,989 | 15,991 |
| Arturo Lluberas, (estate of) y Sobrinos (San Francisco) | 4,666 | 3,733 | 1,476 | 1,181 |
| Associacion Azucarera Cooperativa (Lafayette) | 33,983 | 27,186 | 595 | 476 |
| Calaf Collazo, Jaime y Federico (Monserrate) | 19,646 | 15,717 | 828 | 662 |
| Central Aguirre Sugar Co. a trust | 99,900 | 79,920 | 3,291 | 2,633 |
| Central Coloso, Inc. | 44,496 | 35,597 | 967 | 774 |
| Central Eureka, Inc. | 29,803 | 23,842 | 1,669 | 1,335 |
| Central Igualdad, Inc. | 29,879 | 23,903 | 16,102 | 12,881 |
| Central Juanita, Inc. | 24,231 | 19,385 | 2,182 | 1,746 |
| Central San Jose, Inc. | 17,760 | 14,208 | 362 | 290 |
| Central San Vicente, Inc. | 43,762 | 35,010 | 1,933 | 1,546 |
| Central Victoria, Inc. | 20,888 | 16,710 | 661 | 529 |
| Compania Azucarera del Camuy, Inc. (Rio Llano) | 13,493 | 10,794 | 455 | 364 |
| Compania Azucarera del Toa | 26,343 | 21,074 | 291 | 233 |
| Cooperativa Azucarera Los Canos | 25,939 | 20,751 | 774 | 619 |
| Corporacion Azucarera Sauri & Subira (Constancia Ponce) | 9,037 | 7,230 | 840 | 672 |
| Eastern Sugar Associates, a trust | 109,927 | 97,941 | 14,620 | 11,696 |
| Fajardo Sugar Co. | 96,789 | 77,432 | 4 | 3 |
| Land Authority of Puerto Rico | 71,016 | 56,813 | 1,345 | 1,076 |
| Mario Mercado e Hijos (Rufina) | 28,055 | 22,444 | 2,123 | 1,698 |
| Mayaguez Sugar Co., Inc. (Rochelaise) | 8,195 | 6,556 | 661 | 529 |
| Plata Sugar Co. | 33,357 | 26,686 | 1,284 | 1,027 |
| Soller Sugar Co. | 10,520 | 8,416 | 0 | 0 |
| South Porto Rico Sugar Co. of Puerto Rico | 79,629 | 63,703 | 15,286 | 12,229 |
| Sucesion de Jose Gonzalez and Co., S. en C. (Guamani) | 8,623 | 6,898 | 851 | 689 |
| Sucesion de J. Serrales (Mercedita) | 46,742 | 37,394 | 10,364 | 8,291 |
| Valdivieso, Jorge Lucas P. (Pellejas) | 4,986 | 3,989 | 1,037 | 830 |
| TOTAL | 970,635 | 776,508 | 100,000 | 80,000 |

## SOIL CONSERVATION CHIEF AWARDED MEDAL

Hugh Hammond Bennett, Chief of the Soil Conservation Service, U. S. Department of Agriculture, was awarded the John Deere Gold Medal by the American Society of Agricultural Engineers at the Society's annual dinner at Michigan State College, East Lansing, June 22.

The award honors the Department of Agriculture official as "a man whose whole life has been one of love for and service to the soil." Dr. Bennett has been Chief of the Soil Conservation Service since its establishment in 1933. To him goes much of the credit for the development and organization of the national soil conservation program now operating throughout the United States.

The latest John Deere medalist was selected for distinguished achievement in the application of science and art to the soil.

# LOUISIANA SUGARCANE WAGE AND PRICE HEARING

The U. S. Department of Agriculture announced on June 21st that a public hearing will be held at Thibodaux, Louisiana, in the Grand Theater, on July 15, 1949, at 9:30 a.m., for the purpose of receiving evidence (1) on wage rates for workers in Louisiana employed in the harvesting of the 1949 crop of sugarcane and in the planting and cultivation of sugarcane during 1950, and (2) on fair prices for the 1949 crop of sugarcane.

One of the conditions which producers must meet to qualify for payments under the Sugar Act of 1948 is to pay wage rates not less than those determined to be fair and reasonable by the Secretary of Agriculture after public hearing and investigation. The act also provides, as a condition for payment, that processors who are also producers must pay for sugarcane purchased from other producers at prices determined to be fair and reasonable by the Secretary of Agriculture.

In order to obtain the best possible information, the Department requests that all interested persons appear at the hearing to express their views and present appropriate data in regard to wages and prices.

—o—

# PROBLEMS OF MECHANIZING SUGARCANE HARVESTING IN LOUISIANA

*By R. M. Ramp, Sr., Agricultural Engineer, and G. B. Duke, Agricultural Engineer, Division of Farm Machinery, Bureau of Plant Industry, Soils, and Agricultural Engineering Agricultural Research Administration, U. S. Department of Agriculture*

(*Graphs appeared in original article*)

The object of sugarcane harvesting is to obtain the maximum economical recovery of sugar per acre. In order to obtain the maximum recovery it is necessary for the sugarcane delivered to the processing plant to meet the following requirements: (1) Clean, unburned, free from tops, leaves, and mud. (2) Freshly cut, preferably delivered within 24 hours after the cane is cut. By fulfilling these requirements we will obtain the maximum recovery of sugar per acre. How far we can carry each requirement depends upon how much the operation costs as compared to the increase in recovery of sugar.

The effect of trash and its various components on the composition of the cane juice and the indicated recovery of sucrose have been studied (1, 2, 3, 4). However, no detailed studies have been made as to the distribution of trash and sucrose. The following preliminary experiments were undertaken to determine the distribution of trash and sucrose and to secure information for the development of more effective mechanical trash removal equipment. The results of these experiments are summarized in Table 1, and are illustrated graphically by Graphs 1 and 2. In these experiments two identical samples of field-run cane were obtained. One sample was milled without adhering trash and the other sample was milled with the trash. In preparing the cane for these tests each sample was cut into 12-inch sections and corresponding sections were kept together. The analysis of each of the sections is shown in Table 1 along with a summary of the totals. The analysis is summarized on the basis of whole cane since at no other stage are the samples nearly identical. In this report the term "whole cane" designates the entire cane stalk and in-

cludes millable cane, all the leaves and the top. This term is not generally used in the sugar industry, but in studying the various harvesting methods it is necessary to have a common starting point to measure accurately the effect upon recovery of the various harvesting methods.

Graph No. 1 illustrates the distribution of trash, clean cane, and sucrose. The data for plotting these curves were obtained from Table No. 1. These curves were obtained from the weight and analysis of each section analyzed. The shaded area between the whole cane and the clean cane curves represents the distribution of trash between the butt cut and the top of the cane. The percentage of sucrose for each foot of section is given in the second column to the right of the curves, and the accumulated percentage of sucrose for each foot of section is given in the second column. As to be expected, over 50 percent of the total sucrose is contained within the lower 36 inches of the canes. As we move up the stalk the percentage of sucrose drops off very rapidly until at 96 inches 100 percent of the sucrose has been accounted for. The material above 96 inches does not contain any recoverable sucrose.

The sectional and accumulative percentage of clean cane is given in columns three and four. Here again, as with the sucrose, over 50 percent of the millable cane is within the lower 36 inches. As we move up the cane stalk the percentage of clean cane decreases until at 96 inches we are including all the millable cane. The last four columns of figures on the right side of the graph give (a) the percentage of trash per section of the total trash, (b) accumulated percentage of trash of the total trash, (c) accumulated percentage of trash in cane as milled,

**TABLE 1.**

**Summary of effect of trash distribution upon recovery of sugar, experiments 6C and 6D. Variety C. P. 29/103, first stubble. January 3 and 4, 1949.**

| (Sample Section): | 0–12 | 12–24 | 24–36 | 36–48 | 48–60 | 60–72 | 72–84 | 84–96 | 96–108 | 108–120 | 120–132 | 132–144 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clean cane, Experiment 6C | | | | | | | | | | | | | |
| Whole cane, lbs. per T. | 314.20 | 323.40 | 298.40 | 268.20 | 261.40 | 228.20 | 148.40 | 86.40 | 44.00 | 21.00 | 5.80 | 0.60 | 2000.00 |
| Clean cane, lbs. per T. whole cane | 297.84 | 309.53 | 280.35 | 240.40 | 207.58 | 127.42 | 44.97 | 4.58 | | | | | 1512.67 |
| Trash, lbs. per T. whole cane | 16.36 | 13.87 | 18.05 | 27.80 | 53.82 | 100.78 | 130.43 | 81.82 | 44.00 | 21.00 | 5.80 | 0.60 | 487.33 |
| Combined juices, lbs. per T. whole cane | 253.29 | 266.73 | 251.90 | 218.29 | 189.78 | 118.25 | 40.39 | | | | | | 1338.63 |
| Apparent sucrose, % | 16.72 | 16.89 | 15.79 | 15.15 | 13.63 | 11.17 | 8.70 | | | | | | |
| Brix, % | 18.62 | 18.57 | 17.82 | 17.59 | 16.39 | 14.69 | 13.54 | | | | | | |
| N. S. S., % | 1.90 | 1.68 | 2.03 | 2.44 | 2.76 | 3.52 | 4.84 | | | | | | |
| Sucrose, lbs. per T. whole cane | 42.35 | 45.05 | 39.77 | 33.07 | 25.87 | 13.21 | 3.51 | | | | | | 202.83 |
| N. S. S., lbs. per T. whole cane | 4.81 | 4.48 | 5.11 | 5.33 | 5.24 | 4.16 | 1.95 | | | | | | 31.08 |
| Sucrose loss in molasses, lbs. per T. whole cane | 6.01 | 5.60 | 6.39 | 6.66 | 6.55 | 5.20 | 2.44 | | | | | | 38.85 |
| Sucrose recovery, lbs. per T. whole cane | 36.34 | 39.45 | 33.38 | 26.41 | 19.32 | 8.01 | 1.07 | | | | | | 163.98 |
| Accumulated sucrose recovery, lbs. per T. whole cane | 36.34 | 75.79 | 109.17 | 135.58 | 154.90 | 162.91 | 163.98 | | | | | | 163.98 |
| Cane with trash, Experiment 6D | | | | | | | | | | | | | |
| Whole cane, lbs. per T. | 273.80 | 286.60 | 274.80 | 233.40 | 238.40 | 241.60 | 205.60 | 121.40 | 68.60 | 39.80 | 14.00 | 2.00 | 2000.00 |
| Clean cane, lbs. per T. whole cane | 263.08 | 269.17 | 252.92 | 209.95 | 198.47 | 172.18 | 91.92 | 9.46 | | | | | 1467.15 |
| Trash, lbs. per T. whole cane | 10.72 | 17.43 | 21.88 | 23.45 | 39.93 | 69.42 | 113.68 | 111.94 | 68.60 | 39.80 | 14.00 | 2.00 | 532.85 |
| Combined juices, lbs. per T. whole cane | 258.26 | 253.01 | 237.69 | 195.40 | 194.45 | 202.50 | 169.94 | | | | | | 1511.25 |
| Apparent sucrose, % | 15.44 | 15.94 | 15.46 | 14.90 | 13.00 | 10.18 | 5.40 | | | | | | |
| Brix, % | 17.25 | 18.27 | 17.88 | 17.65 | 16.17 | 14.31 | 10.73 | | | | | | |
| N. S. S., % | 1.81 | 2.33 | 2.42 | 2.75 | 3.17 | 4.13 | 5.33 | | | | | | |
| Sucrose, lbs. per T. whole cane | 39.96 | 40.33 | 36.75 | 29.11 | 25.28 | 20.61 | 9.18 | | | | | | 201.22 |
| N. S. S., lbs. per T. whole cane | 4.67 | 5.90 | 5.75 | 5.37 | 6.16 | 8.36 | 9.06 | | | | | | 45.27 |
| Sucrose loss in molasses, lbs. per T. whole cane | 5.84 | 7.37 | 7.19 | 6.71 | 7.70 | 10.45 | 11.32 | | | | | | 56.59 |
| Sucrose recovery, lbs. per T. whole cane | 34.12 | 32.96 | 29.56 | 22.40 | 17.58 | 10.16 | −2.18 | | | | | | 144.60 |
| Accumulated sucrose recovery, lbs. per T. whole cane | 34.12 | 67.08 | 96.64 | 119.04 | 136.62 | 146.78 | 144.60 | | | | | | 144.60 |
| Loss of sucrose due to trash, lbs. per T. whole cane | | | | | | | | | | | | | 19.35 |

**Note**: The recovery of sugar was obtained by multiplying the pounds of non-sucrose solids by 1.25 and subtracting this amount from the total sucrose.

Example: $31.08 \times 1.25 = 38.85$ pounds of sucrose lost in molasses.
$202.83 - 38.85 = 163.98$ pounds of sucrose recovered per ton whole cane.

and (d) pounds of accumulated trash per ton of whole cane.

Now let us consider how the quantity of trash affects the recovery of sucrose per ton of whole cane. In this experiment canes topped 48 inches above the butt cut and cleaned yielded 135 pounds of indicated recoverable sucrose. When an identical sample of this cane was milled with the adhering trash of 6.88 percent the indicated recovery of sucrose dropped to 119 pounds or a direct loss of 16 pounds of sucrose per ton of whole cane. Had this same cane been topped at an average of 72 inches the cleaned cane would have yielded 162 pounds of sucrose per ton whole cane as compared to 146 pounds of sucrose per ton of whole cane when milled with adhering trash of 11.81 percent. At this level of topping the 11.81 percent trash resulted in a direct loss of 16 pounds of sucrose per ton of whole cane. When we raised the average topping cut to 84 inches above the butt, the recovery for clean cane became 163 pounds per ton of whole cane as compared to 144 pounds when milled with all its adhering trash. This represents a direct loss of 19 pounds of sucrose due to the 16 percent trash in the cane as milled. To remove the 16 percent trash on the canes below the 84-inch level it would be necessary to remove 315 pounds of trash per ton of whole cane. If this amount of trash can be removed for less than the value of 19 pounds of sucrose it becomes economical to top the cane at the 84-inch level.

Now let us consider the economics of removing trash from sugarcane. The data for plotting graph No. 3 were obtained from the clean cane data of Table 1. In this graph the distribution of the trash and sucrose are plotted separately, whereas in graph No. 1 these components are combined to produce the whole cane curve. When we compare the recovery of sucrose at the 72-inch height of cut with the 84-inch height we find that on a clean cane basis 1 pound of sucrose was obtained per ton of whole cane by raising the topper 1 foot. Had we milled the cane with the adhering trash, however, we would have lost 2 pounds of sucrose per ton of whole cane by raising the topping knife to 84 inches.

At the 72-inch level of topping it was necessary to remove 230 pounds of trash, below the topping level, per ton of whole cane to obtain a recovery of 162 pounds of sucrose per ton of cane, whereas at the 84-inch level of topping 334 pounds of trash per ton of whole cane had to be removed below the topping level to obtain a recovery of 163 pounds of sucrose per ton of whole cane. For clean cane, the maximum recovery of 163 pounds of sucrose per ton of whole cane is obtained at the 84-inch level of topping. However, the maximum economical recovery may be considerably less. For example, we increased the recovery 1 pound of sucrose per ton by raising the topping level from 72 inches to 84 inches. However, to gain this extra pound of sucrose it was necessary to remove 104 pounds of trash per ton and unless the cost of removing this trash is less than the value of 1 pound of sucrose we are not obtaining the maximum economical recovery.

Let us assume a stripping cost of 1/10 cent per pound of trash removed. It was necessary to remove 103 pounds of trash in the 72 to 84-inch section in order to recover 1 pound of sucrose per ton of whole cane. On this basis it would have cost 10.3¢ to remove the trash from which we recovered approximately 7¢ from the sucrose. In this case it would not be economical to cut the cane at the 84-inch level since the cost of removing the trash from the 72 to 84-inch section would be greater than the returns from the sucrose obtained. At the 60 to 72-inch section it would be necessary to

remove 100 pounds of trash per ton of whole cane from which 8 pounds of sucrose would be obtained. Assuming the same basis of cost as with the 72 to 84-inch section it would cost 10¢ per ton of whole cane to remove the trash from which we would obtain a revenue of 56¢ per ton of whole cane from the sucrose. In this case it would be economical to top the cane at the 72-inch level since the income from stripping this 1 foot section was greater than the cost.

As we move down the cane stalk the amount of trash that has to be removed per unit of indicated recoverable sucrose decreases and therefore, under these conditions, the maximum economical recovery of sucrose would be obtained at the 72-inch level of topping.

*Editor's note*—This very excellent article by Dr. Ramp and Dr. Duke will be continued in the next issue of *The Sugar Bulletin.*

The data for the graphs was obtained from Table #1 which is printed in this issue.

---

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[4] Keller, Arthur G. and Seip, John J. Louisiana State University Engineering Experiment Station Bulletin Series No. 14.


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—o—

## IN WASHINGTON

(Continued from page 284)

I was not aware of any emergency in the sugar market, as my information is that ample supplies of sugar have been available regularly at the announced price. I have heard that there is a slightly difficult situation which has arisen for the California & Hawaiian Refinery at San Francisco which ordinarily takes Hawaiian raws. This situation is due entirely to the strike in Hawaii. It is my understanding that the California & Hawaiian Refinery has been making arrangements to take Filipino and Puerto Rican sugar temporarily during this strike. They have been able to buy sugar on the open market at 5.90c per lb.

As the Administrator of the Sugar Act, you have instructions from Congress to permit the price of sugar to rise to a point which will make the price of refined sugar at the level which prevailed in the first ten months of 1947, or 8.40c per lb. In addition, Congress has set as a proper level the inclusion of the increased cost of living above the 8.40c per lb. As you know,

refined sugar is now being sold at 7.85c per lb., which is considerably under the 8.40c, plus cost of production increases since 1947.

My constituents in Louisiana, who are sugar cane growers and sugar producers, are somewhat mystified by the action you have taken at this time when there is no apparent emergency. They are particularly concerned because you apparently have failed to recognize that they are entitled to a price of at least 8.40c, plus cost increases since 1947, under the Sugar Act of 1948.

They acknowledge that you have done pretty well in maintaining a reasonable price under the Sugar Act during 1949. But they feel that they are entitled to some further increases and hope that after a restudy of the situation, you will permit the price to rise reasonably in accordance with the Sugar Act provisions.

They further acknowledge that your action last week has not, so far, affected the market one way or the other, but they do state that you have by your action caused the price levels to be halted from realizing price increases for raw as well as refined sugar.

I trust it will be convenient for you to give me some encouragement so that I may pass it on to my constituents in Louisiana.

Sincerely yours,
ALLEN J. ELLENDER
U. S. Senator

June 22, 1949

*By Congressman Willis*

My Dear Mr. Secretary:

It has come to my attention that you have announced a deficit in the domestic sugar beet area of 200,000 tons. This is a disappointment to me because you indicated to Congressman Boggs and me, on the occasion of our interview in March, that you did not contemplate this course at this time, or at least that we would be given advance notice of any increase in the consumption estimate or in connection with deficits to be re-allocated.

As you know, Mr. Secretary, the crop of 1948 was the cause of losses in the Louisiana sugar industry, particularly in connection with processing of sugarcane into raw sugar. This was due primarily to the fact that Section 201 of the Sugar Act was not carried out in accordance with the letter and spirit of that Act. The formula provided in that Section spells out the procedure which Congress intended should be followed in arriving at the consumption estimate and eventually the price of sugar. This is the most important provision of the Act from the standpoint of the sugarcane grower as well as from the standpoint of the processor of sugarcane.

Currently, the Consumers' Price Index as published by the Bureau of Labor Statistics of the Department of Labor is 169.7 for April 5, 1949, which is the last published

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index. This, as I figure it, should mean a price of $8.89 average for refined sugar wholesale for the year.

I recognize that this is not very easy to accomplish. I realize that the refiners have resisted your effort to increase the price to the level of 1947, plus some increase to compensate for the additional cost of production. But the fact remains that you have not succeeded in raising the price of refined sugar to the $8.40 price which existed in 1947, as the most recent market quotations for refined sugar have been listed at $7.85.

I appreciate that it is the average price for 1949 which you must figure on, and am aware that we still have a complete half-year to average out a price of refined sugar which would actually represent the $8.40 price, plus some additional increase for costs of production.

As a practical proposition, the planters of Louisiana recognize that our interest in price is largely confined to the grinding season which you have set as October to February 1. The average price of raw sugar during that period becomes the basis for settlement on sugarcane and on raw sugar produced and delivered. But they also know that the trend of prices in the sugar market is gradual and there are many influences which affect this trend. Therefore, they are very much concerned about the market prices during the summer months which will gradually control and determine what the price of raw sugar and sugarcane may be next fall.

We will be glad to discuss this matter with you at any time and hope that you will remember us when contemplating any change.

Very sincerely yours,

"Edwin E. Willis"
Member of Congress

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# THE SUGAR BULLETIN

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ol. 27 NEW ORLEANS, LA., JULY 15, 1949 No. 20

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# IN WASHINGTON WITH C. J. BOURG

*The Following Resolution Was Adopted By the Executive Committee of the American Sugar Cane League on June 29th.*

With Section 201 of the Sugar Act of 1948 constantly in mind, and encouraged by the agreement made with the Secretary of Agriculture that he would consult with Congressman Boggs and Congressman Willis before reaching any final determination as to the re-allocation of deficits or any change in the consumption estimate for 1949, the Louisiana Sugar Industry is seeking to understand what reasons may have developed in the minds of the Sugar Branch or of the Secretary of Agriculture which would justify or explain the re-allocation of 200,000 tons of sugar from the deficit in the beet area and the re-allocation of 300,000 tons of sugar from the deficit in the Philippines.

The Louisiana Sugar Industry agreed to and supported the Sugar Act of 1948 largely because of the assurance and practical guarantee contained in Section 201 of the Sugar Act of 1948 that the price of refined sugar, and all other sugars in proportion, would be maintained at the level which existed in the first ten months of 1947, plus consideration of increases in the costs of production since that time.

According to a fair interpretation of Section 201, the price having averaged $8.27 for refined sugar in the first ten months of 1947, and the index being 169.2 for May 15, this indicates that the average price for refined sugar should be $8.87, while the presently announced price for refined sugar, at wholesale, is only $7.85.

BE IT RESOLVED by the American Sugar Cane League that in view of the above facts we appeal to our Congressional Delegation from Louisiana to seek from the Secretary of Agriculture an understanding of his action and assurances that it is his purpose to carry out the provisions of Section 201 of the Sugar Act of 1948, as written and intended by Congress.

---

**Senator Long Writes Secretary Brannan**

June 30, 1949

The Honorable
Secretary of Agriculture
Washington, D. C.

My dear Mr. Secretary:

I have been very much disturbed by your announcement of a re-allocation of 300,000 tons of Philippine sugar to Cuba at this particular time.

When you re-allocated 200,000 tons of beet sugar the other day, I thought that this action was premature; and Senator Ellender so wrote you on June 15th. No reply has so far been received to Senator Ellender's letter, and we would appreciate very much receiving such a reply, since you have apparently concluded that your additional allocation is justified.

In view of the fact that you evidently must consider your action

(Continued on page 311)

# WAGE RATES FOR FLORIDA SUGARCANE WORKERS ANNOUNCED

UNITED STATES DEPARTMENT OF AGRICULTURE

*Production and Marketing Administration Sugar Branch*

Sugar Determination 863.2

*Wage Rates for Persons Employed In Sugarcane Industry in Florida, July* 1, 1949-*June* 30, 1950

Pursuant to the provisions of section 301 (c) (1) of the Sugar Act of 1948 (herein referred to as "act"), after investigation, and consideration of the evidence obtained at the public hearing held in Clewiston, Florida, on May 16, 1949, the following determination is hereby issued:

§ 863.2 *Fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of sugarcane in Florida during the period July* 1, 1949 *through June* 30, 1950. The requirements of section 301 (c) (1) of the act shall be deemed to have been met with respect to the production, cultivation, or harvesting of sugarcane in Florida during the period from July 1, 1949 through June 30, 1950, if the producer complies with the following:

(a) *Wage rates.* All persons employed on the farm in the production, cultivation, or harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates as agreed upon between the producer and the laborer, but, after the date of issuance of this determination, not less than the following:

(1) *For work performed on a time basis.*

| | Cents per hour |
|---|---|
| (i) All work except as otherwise specified: | |
| Adult males | 45.0 |
| Adult females | 38.0 |
| (ii) Tractor drivers and operators of mechanical harvesting or loading equipment | 55.0 |
| (iii) Workers between 14 and 16 years of age (maximum employment per day for such workers, without deductions from payment to the producer, is 8 hours | 38.0 |

(2) *For work performed on a piece-work basis.* The piecework rate for any operation shall be as agreed upon between the producer and the laborer: *Provided,* That the earnings of each laborer employed on piecework during each pay period (such pay period not to be in excess of two weeks) shall average for the time involved not less than the applicable hourly rate prescribed in subparagraph (1) of this paragraph.

(b) *Perquisites.* In addition to the foregoing, the producer shall furnish to the laborer, without charge, the perquisites customarily furnished by him, such as a habitable house, medical attention, garden plot, and similar items.

(c) *Subterfuge.* The producer shall not reduce the wage rates to laborers below those determined herein through any subterfuge or device whatsoever.

### Statement of Bases and Considerations

(a) *General.* The foregoing determination provides fair and reasonable wage rates to be paid by producers to persons employed in the production, cultivation, or harvesting of sugarcane in Florida during the period from July 1, 1949, through June 30, 1950, as one of the conditions for payment under the act. In this statement, the foregoing determination, as well as de-

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# PROBLEMS OF MECHANIZING SUGARCANE HARVESTING IN LOUISIANA

*By R. M. Ramp, Sr., Agricultural Engineer, and G. B. Duke, Agricultural Engineer, Division of Farm Machinery, Bureau of Plant Industry, Soils, and Agricultural Engineering Agricultural Research Administration, U. S. Department of Agriculture*

(*Continued from July 1st Issue of The Sugar Bulletin*)

I believe that we will all agree that clean cane is desired for maximum recovery, however whether clean cane is economical will naturally depend upon the cost of removing the trash. Since at the present time most of the sugarcane harvesters which can clean cane are in an experimental stage of development it is advisable at this time to consider what effect trash has upon the recovery of sucrose. In experiment No. 6D the adhering trash was milled with the cane. The data from this experiment are given in Table 1 and are illustrated graphically by graph 4. The procedure in conducting this experiment was identical to the preceding experiment except the trash was milled with the cane. Graph 4 illustrates the distribution of trash and indicated recoverable sucrose. The quantity and percentage of the sucrose and trash are given at the right side of the graph for the various sections. In this experiment 2.18 pounds of sucrose were lost per ton of whole cane when the 72 to 84-inch section was milled. In this case the 113 pounds of trash adhering to the 72 to 84-inch section absorbed all the sucrose that was present in this section and would have taken 2.18 pounds of sucrose from the lower section had they been milled together. All sucrose that was present in this section was used to form molasses and therefore no sucrose was recovered.

The 60 to 72-inch section contained 69.4 pounds of trash per ton of whole cane and had an indicated recovery of 10.16 pounds of sucrose per ton of whole cane. In this experiment the maximum recovery would have been obtained at the point where the indicated recoverable sucrose curve cut the 0 recovery on the height curve, which in this case would have been at 77 inches. The total indicated recovery at this point would have been slightly more than 146 pounds of sucrose per ton of whole cane. Had the canes been topped at 84 inches the indicated recovery would have dropped to 144 pounds of sucrose per ton of whole cane.

In comparing cleaned with uncleaned cane in these experiments we find that the maximum indicated recovery for clean cane was 163.98 pounds of sucrose per ton of whole cane, whereas the maximum recovery for the unclean cane was 145.78 pounds of sucrose per ton of whole cane. This represents a direct saving of 17.2 pounds of sucrose per ton of cane due to the removal of the trash below the topping level. In order to save this sucrose it would be necessary to remove 334 pounds of trash by stripping from below the topping level of 84 inches. When the removal of the 334 pounds of trash can be performed for less than the value of the 17.2 pounds of sucrose it then becomes economical to remove the trash from the canes below the topping level.

With this information on the effect of trash we are now in a better position to attack the second requirement for maximum recovery of sucrose, namely, fresh cane. This is not new to us. Mr. Grayson recently called our attention to an Extension Circular No. 159 pub-

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# SECRETARY BRANNAN REPLIES TO CONGRESSMAN WILLIS

July 7, 1949

Honorable Edwin E. Willis
House of Representatives

Dear Mr. Willis:

This is in reply to your letter of June 22, 1949 concerning the pro-ration of a 200,000-ton deficit in the domestic beet sugar area quota for 1949.

The significance of pro-rations of deficits is entirely different from that of changes in the consumption requirement determination and the two should not be considered in the same light. Under Section 204 of the Sugar Act of 1948, the Secretary is required to pro-rate deficits which are recognized to exist and to neglect to do so would render unavailable the corresponding amount of sugar under the existing consumption requirement determination. On the other hand, consumption requirement determinations are to be established on the basis of the various criteria specified in Section 201, all of which are directed to the over-all objective of a supply of sugar which will be consumed at prices which are not excessive to consumers and which will fairly and equitably maintain and protect the domestic sugar industry.

Although the relationship of prices to the Consumers' Price Index referred to in Section 201 and to which you refer in your letter has not been fully attained, it is considerably more closely approached currently than a year ago. Furthermore, while the price of refined sugar has increased about .5 cent per pound from the low point in 1948, the price of raw sugar, in which Louisiana producers are most directly concerned, has gone up .9 cent per pound from its 1948 low point.

In view of these price changes and the fact that sugar distribution so far this year has exceeded that of a year ago by 300,000 short tons, raw value, we believe that we do not have a basis, at this time, for reducing the consumption requirement determination of 7,250,000 short tons, raw value.

The facts of the beet sugar marketing situation make the determination of a 200,000-ton deficit wholly reasonable. January 1st inventories held by beet processors, and 1949 production from 1948-crop beets totalled 1,155,000 short tons. The largest marketings in any year from new-crop beets totalled 420,000 short tons. The 1949 beet acreage is expected to be abnormally small, thus increasing the likelihood that the domestic area quota of 1,800,000 short tons will not be marketed.

You will recall from previous correspondence our mention of several technical problems confronting the Louisiana sugar producers which concern us greatly. The solution of such problems is of utmost importance in re-establishing the income position of Louisiana cane producers.

We always appreciate your views on the administration of the Sugar Act, and we shall be happy to have your suggestions for the solution of the production problems facing the Louisiana industry.

Sincerely yours,

"Charles F. Brannan"
Secretary

# THE MARKETS

A new raw sugar contract known as Contract No. 6 of the New York Coffee & Sugar Exchange will begin trading on Monday, July 18th with the first delivery month to be November 1949.

The new contract deals with the same sugars that the present #5 (Domestic) contract handles and the quotations will also be based on Cuban raw sugar in bond.

The main difference between the two contracts is that delivery on the present #5 Contract must be made *in a licensed warehouse* in New York whereas delivery under the #6 Contract is designated as *the end of ship's tackle berthed at a licensed warehouse* in New York The idea of this is to eliminate the heavy cost of warehousing now required by the #5 Contract.

Other changes such as one notice day and the option given the owner of 40 or more "long" contracts to designate the berth at which the sugar shall be delivered are all calculated to facilitate the delivery of the sugar as inexpensively as possible.

Both the #5 and #6 contracts will be carried by the Exchange and this means that three active sugar future contracts will be in question. These are the #4 Contract covering sugars outside the U. S. quota system and the #5 and #6 contracts covering sugars within the U. S. quota system.

———o———

*The paragraphs below are from the June issue of the "Demand and Price" bulletin of the U. S. Department of Agriculture.*

The outlook is for a continuation of firm domestic sugar prices. Factors supporting the wholesale refined price are firm raw sugar prices, and the expected summer seasonal increase in demand. Prolongation of the strike of longshoremen in Hawaii, that has been in effect since May 1, may also be an additional factor.

Sugar prices for the May 16-June 15 period were as follows: raw, duty paid, New York, 5.83 cents; wholesale refined, New York, 7.95 cents; and raw, f. a. s. Havana, 4.05 cents. Prices for the comparable period in 1948 were: 5.21, 7.50, and 4.19 cents. The U. S. average retail price in May of 9.5 cents a pound compares with 9.3 cents in May, 1948. In late June the price of raw sugar, duty paid, New York, rose to 5.9 cents, the highest quotation since early January, 1948.

Additional sugar quotas were alloted to Puerto Rico, Cuba and to full-duty foreign countries in recent rulings by the Department of Agriculture. A deficit of 200,000 tons declared for the domestic sugar beet area was prorated: 60,635 tons to Puerto Rico, and 139,365 tons to Cuba; and a deficit of 300,000 tons declared for the Philippine Islands was prorated: 285,000 tons to Cuba, and 15,000 to full-duty foreign countries. The present adjusted area quotas are: domestic beet, 1.600,000 tons; domestic cane, 500,000 tons; Hawaii, 1,052,000 tons; Puerto Rico, 970,635 tons; Virgin Islands, 6,000 tons; Cuba 2,515,915 tons; Philippine Islands, 557,000 tons; and other foreign countries, 48,450 tons.

World production of beet and cane sugar for the 1948-49 season is now estimated at 37,300 thousand tons, a record high. This is 8 percent more than the amount produced in the 1947 season, and 5 percent more than the prewar 1935-39 average. World cane sugar production is estimated at 26,219 thousand tons, an all-time high, 2 percent greater than 1947, and 14 percent more than the prewar average. World beet sugar production is estimated at 11,081 thousand tons, 21 percent more than in 1947, but 8 percent less than the prewar average.

## PROBLEMS

(Continued from page 302)

lished in 1935 by Louisiana State University which emphasized the importance of proper topping and fresh cane. Dr. John I. Lauritzen in his work on the inversion of sucrose, discussed in Technical Bulletin No. 939, published in 1948, showed quite clearly that the losses due to inversion as a result of delayed milling may be quite large.

The main objective to keep in mind is that fresh cane is essential for maximum recovery. Some varieties are more resistant to inversion than others, and again the weather has a direct effect upon the rate of deterioration. We can select our variety, but we can't change the weather. It is therefore important that we organize our harvesting operations for maximum recovery. Since the effects of trash and freshness are often interlocked in the harvesting operation, let us now consider how we can best manage these two factors to obtain the maximum economical recovery of sucrose. When we leave the adhering trash on the cane it is necessary to lower the topper to obtain the maximum recovery since the upper leaves and tops introduce more molasses-forming compounds than sucrose. Until the trash can be removed economically it appears that it would be better to mill the cane with the trash rather than attempt to hold the cane until the trash can be burned.

The present practice of removing cane trash by burning is probably the most economical method. However, like all methods or procedures this method has its advantages and disadvantages. The main advantages for the disposal of trash by burning are (1) most economical method, (2) very effective after a freeze or during the latter part of the harvesting season. Now let us consider some of the limitations or disadvantages of removing trash by burning. First, burning is undependable, since the burning is directly affected by the weather, (2) it is ineffective early in the season unless the cane is allowed to remain on the ground several days so that the green leaves will be dried sufficiently for burning, (3) it increases the time from cutting until milling and thereby increases loss in weight and decreases recoverable sucrose due to inversion, and (4) it accelerates the rate of deterioration, especially if the cane is rained on before it is milled and a delay is introduced between burning and milling.

If we don't burn the trash, what can be done? We might go back to cutting and stripping the cane by hand, but where is the labor going to come from and will it be economical? Those questions are difficult to answer, but if we evaluate the problem, based on past history, perhaps we can arrive at a practical solution. For example: any of the mechanical cane cutters in use at the present time will cut at least 200 tons of cane per 9-hour day. Normally 18 man-hours would be used to perform this operation, or in other words, 1 man-hour represents 11 tons of cane. Now if the cane were cut top and bottom and piled by hand, as is done with the machines, we find that 9 man-hours are required to cut 3 tons of cane, or in other words, 1 man-hour cutting cane by hand represents 0.33 tons. Under these conditions, 1 man-hour used cutting cane by machine does 33 times as much work as cutting cane by hand. Yes! the machine is expensive and maintenance is high, but even under present conditions is it not more economical to use the machine than go back to hand cutting? That does not for one moment mean that we cannot improve our machine cutting and to a large extent gain back some of the sucrose that is a direct loss due to our present harvesting practices. For instance, we all know that the bottom knife is frequently operated considerably above the

ground line and thereby we lose more sugar due to high stubbles than is lost at present due to trash. However, in order to gain back some of the sucrose lost it is necessary for us to adjust our harvesting practices to obtain the maximum economical recovery and in order to do this it is first necessary to deliver fresh cane and second, it is necessary to adjust our trash removal so that we can obtain the maximum economical recovery of sucrose.

How can we meet these requirements with our present harvesting equipment? To meet these requirements it is first necessary to establish quotas for each grower or group of growers so that the producers can organize their harvesting equipment efficiently to meet the daily quota. If small growers supply the bulk of the cane milled, since as a general rule the quota for one grower would not be sufficient for economical mechanization of the harvesting operation, it would be advisable for a group of small growers to pool their daily quota so that among themselves they will have an economical harvesting unit. For the most efficient utilization of our present harvesting equipment the unit for the daily quotas should be the average capacity for a cane cutter, or approximately 200 tons per day. The exact amount would vary depending upon the efficiency in handling the harvesting equipment. Since the cane cutter is the backbone of the harvesting operation, all the other harvesting operations should be adjusted to the quota and daily capacity of the harvester. By cutting and hauling a fixed quantity of cane daily there is no reason for stock-piling cane in the field for long periods.

In order to fulfill the second requirement (fresh cane) for maximum recovery it is necessary that all the cane be hauled within less than 24 hours after cutting.

The machine cutting of the cane should be regulated so that the machine never has over the daily quota on the ground at one time. By restricting our cutting to a 24-hour supply we naturally do not allow time for the trash to dry sufficiently so that it can be properly burned, especially during the early part of the season. However, we can largely overcome this difficulty by topping lower to the point where the maximum recovery of sucrose is obtained, as illustrated in graph 4. You may say, "Why, I couldn't afford to have a detailed experiment conducted as illustrated by your graphs every time I started to cut a field". You are correct; such a procedure would not be practical if it were necessary to conduct this test on every variety for all the various times during the harvest. However, there is another approach to the problem that may enable us to answer the question of where we should top the cane to obtain maximum recovery.

In order to better determine the proper topping level a series of experiments was conducted during the 1946 harvest season to determine the variation in length of the canes and also the distribution of indicated recoverable sucrose. In conducting these experiments each cane of the sample of field run cane was properly topped by hand and then graded as to length. The results from experiment No. 3C of that series of experiments are given in Table No. 2. The data have been tabulated by grouping the canes into 6-inch increment groups in order to condense the table. The length, number of canes, and weight are given for each group length along with the computed percentage of canes in each group. In column 5 the percentage of canes that have been topped at or above the correct topping point are given. For example, at the 60-inch level over 14 percent of all the canes would have been improperly topped, whereas at the 84-inch level over 51 percent of

the canes would have been improperly topped.

**TABLE 2**

**Summary of sugarcane uniformity experiment No. 3G, variety C. P. 36/105, plant cane, Nov. 25, 1946.**

| Group length (Inches) | Canes per group (Number) | Weight per group (Pounds) | Total Cane (Percent) | | Percent mature canes at group level |
|---|---|---|---|---|---|
| | | | Group | Acc. | |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 19 - 24 | 11 | 3.06 | 2.01 | 2.01 | 97.99 |
| 25 - 30 | 9 | 3.58 | 1.65 | 3.66 | 96.34 |
| 31 - 36 | 12 | 6.10 | 2.20 | 5.86 | 94.14 |
| 37 - 42 | 10 | 6.36 | 1.83 | 7.69 | 92.31 |
| 43 - 48 | 9 | 4.88 | 1.65 | 9.34 | 90.66 |
| 49 - 54 | 11 | 9.30 | 2.01 | 11.35 | 88.65 |
| 55 - 60 | 16 | 12.60 | 2.93 | 14.28 | 85.72 |
| 61 - 66 | 29 | 26.84 | 5.31 | 19.59 | 80.41 |
| 67 - 72 | 33 | 37.14 | 6.04 | 25.63 | 74.37 |
| 73 - 78 | 46 | 62.44 | 8.43 | 34.06 | 65.94 |
| 79 - 84 | 94 | 158.34 | 17.22 | 51.28 | 48.72 |
| 85 - 90 | 103 | 198.50 | 18.87 | 70.15 | 29.85 |
| 91 - 96 | 93 | 205.36 | 17.03 | 87.18 | 12.82 |
| 97 - 102 | 55 | 141.54 | 10.07 | 97.25 | 2.75 |
| 103 - 108 | 15 | 44.68 | 2.75 | 100.00 | 0 |
| Total--- | 546 | 920.72 | 100.00 | | |

In connection with the above experiment, sectional analyses were made of each 1-foot section and the apparent pounds of sucrose per section was computed. On the basis of this experiment, had the cane been properly topped and stripped the apparent sucrose per ton of cane would have been 208 pounds when topped at the 96-inch level. At the 96-inch level over 87 percent of the cane would have been improperly topped had they not been retopped by hand selectively.

The results from the above series of experiments showed that there was only a slight variation between varieties as to length. This fact is illustrated by the unformity index values as follows:

| Variety | Uniformity index[1] |
|---|---|
| C. P. 34/120 | 0.714 |
| C. P. 29/103 | 0.760 |
| C. P. 29/320 | 0.785 |
| C. P. 36/105 | 0.781 |

[1] An index value of 1.0 represents a conditi n wherein all the canes have the same mature length.

It was found that there is a wide variation within varieties as to length. This variation is illustrated by graph No. 5.

It appears, in view of the results from these experiments, that the proper level of topping for maximum recovery of sucrose can be reduced to a simple rule provided a chemical analysis is made to determine the sucrose distribution as related to the percentage of mature joints at a given level of topping.

In addition to the above method, the optimum level of topping can be determined fairly accurately from factory sucrose analyses provided the cane is milled within 24 hours and prompt action is taken to adjust the topper accordingly.

## Acknowledgment

The authors wish to express their appreciation to Dr. R. T. Balch and Mr. C. B. Broeg, Bureau of Agricultural and Industrial Chemistry, for their cooperation in helpful planning and for conducting the chemical analyses of the samples. In addition we wish to express our thanks to Mr. Lester G. Davidson and Dr. George Arceneaux of the Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, for making juice and bagasse analyses by the conventional method and for the use of station equipment for milling the samples.

## FLORIDA WAGE RATES

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terminations for prior years, will be referred to as "wage determination" identified by the period for which effective.

(b) *Requirements of the act and standards employed.* In determining fair and reasonable wage rates it is required under the act that a public hearing be held, that investigations be made, and that consideration be given to (1) the standards formerly established by the Secretary under the Agricultural Adjustment Act, as amended, and (2) the differences in conditions among various sugar producing areas.

A public hearing was held in Clewiston, Florida, on May 16, 1949, at which interested persons presented testimony with respect to fair and reasonable wage rates for sugarcane work during the period July

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1, 1949, through June 30, 1950. In addition, investigations have been made of conditions affecting such wage rates. Consideration has been given by the testimony presented at the hearing and to the information resulting from investigations. The primary factors which have been considered are (1) prices of sugar and by-products; (2) income from sugarcane; (3) costs of production; (4) cost of living; and (5) relationship of labor cost to total cost. Other economic influences also have been considered.

(c) *Background.* Wage determinations for sugarcane work in Florida have been issued each year since 1937. The first covered work in the harvesting of the 1937 crop while subsequent determinations covered all work applicable to the production, cultivation, or harvesting. Until the 1945-46 crop harvesting wage determination, two wage determinations were issued each year, one covering production and cultivation for a calendar year, the other covering the harvesting of a crop. In the 1945-46 crop harvesting wage determination, production and cultivation wage rates also were included for the first six months of the calendar year 1946. Beginning July 1, 1946, a single determination has been issued each year for a 12-month period covering production, cultivation, and harvesting wages. Coincident with the issuance of a single determination, the rate differentials therefore existing between harvest and nonharvest operations were eliminated. The rates subsequently provided have been applicable to all work on sugarcane.

The early determinations specified time rates for adult male and female workers with alternative tonnage rates for harvesting. Subsequently, rate coverage was extended to include semi-skilled and skilled workers and workers between 14 and 16 years of age. Beginning with the

1946-47 wage determination, the practice of establishing specific harvesting piecework rates was discontinued. This change was made because the use of tonnage rates was discontinued by producers in favor of row rates since the latter provided greater incentive for increased output. The many variable factors involved made it impracticable to establish "per row" rates in the determination. However, provision was made for piecework rates by specifying that such rates for all classes of work were to be as agreed upon between producers and workers but subject to a minimum hourly guarantee of the workers' earnings.

In the 1946-47 wage determination the piecework minimum hourly guarantee was five cents per hour more than the basic time rates provided. In the 1947-48 wage determination this provision was eliminated and in lieu thereof it was provided that the individual earnings of not less than 90 percent of all workers employed on a piecework basis average for the time involved not less than the applicable hourly rates. In the 1948-49 wage determination the minimum hourly guarantee of the basic time rate earnings for laborers employed on piece work was extended to all such workers.

Generally, the level of rates established in the early determinations reflected the wage-income relationship prior to 1938. In the wage determinations covering the 1944-45 crop, an adjustment was made in the wage-income relationship after reappraisal of the factors influencing wage rates. Wage rates have been adjusted periodically to recognize economic changes. As a result of changes in the economic factors affecting wage rates, together with the adjustment in the wage-income relationship, the weighted average basic time rates have been increased from 17.9 cents


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per hour in 1938 to 45.8 cents per hour in 1948-49, an increase of 155.9 percent.

(d) 1949-50 *wage determination.* The 1949-50 wage determination continues unchanged the basic wage rates and other provisions of the 1948-49 wage determination. Since the base period (1944-45), sugarcane production costs and workers' cost of living have increased substantially and only during recent months has there been an indication that such costs have ceased to increase. Because of lower sugar and molasses prices the estimated income to producers has declined from the high point reached in 1946-47, though the raw sugar price in mid-1949 is approximately 11 percent higher than in mid-1948. Available data indicate that labor productivity has also increased during recent years as the result of mechanization and the nearly uniform practice of piecework employment. During 1948-49 the earnings of persons engaged on piecework in cultivation were reported to average about 60 cents per hour and between 65 cents and $1.05 per hour for cutting sugarcane during the harvest. In addition to these earnings, workers have been furnished without charge the customary perquisites such as housing, water, garden plot, medical attention. After considering all factors together with testimony presented at the public hearing, it is deemed fair and reasonable to continue unchanged the basic rates specified in the 1948-49 determination.

Among the recommendations made at the public hearing was the elimination of the minimum hourly guarantee of earnings for persons employed on piecework. As on previous occasions when such recommendation has been made it is considered that the elimination of this provision would exclude the vast majority of sugarcane workers in Florida from the fair and reasonable wage provisions of the Act. Investigation reveals that in most instances producers and workers use the basic time rates as guides in determining piecework rates, thereby developing an important interdependence between the two methods of payment.

Accordingly, I hereby find and conclude that the foregoing wage determination will effectuate the wage provisions of the Sugar Act of 1948.

(Secs. 301, 403, 61 Stat. 929, 932; 7 U.S.C. Sup. 1131, 1153.)

Issued this 1st day of July 1949.

(Seal) CHARLES F. BRANNAN,
*Secretary of Agriculture.*

(F. R. Doc. 49-5484; Filed, July 6, 1949; 8:57 a.m.)


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## IN WASHINGTON

(Continued from page 300)

as consistent with Section 201 of the Sugar Act, by continuing to increase the amount of raw sugar available in the United States—although I am not aware of an emergency existing in the sugar market, nor do I believe that the provisions of Section 201 are being administered in the manner intended by Congress when it passed the Sugar Act—we would like to have a better understanding of your two recent determinations re-allocating sugar, since the price is still considerably below that which existed in 1947 under the OPA.

I am sure the entire Louisiana delegation joins me in the hope that we may have an early reply to Senator Ellender's letter of June 15th and to this letter.

With assurances of my highest esteem, I am

Sincerely yours,
"Russell B. Long"
United States Senator

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### Dr. Brandes Honored

Recently Distinguished Service Awards were presented by the Secretary of Agriculture to several of the outstanding scientists in the Department of Agriculture. Other Awards were presented for superior service to individuals and units in the Department of Agriculture.

Among the Distinguished Service Awards was one to Dr. Elmer W. Brandes of the Bureau of Plant Industry, Soils and Agricultural Engineering, with headquarters at Beltsville, Maryland. The Award is as follows:

> "For outstanding performance and leadership to agriculture through the development and administration of research programs for sugarcane, sugar beets and rubber; and for fundamental research on the cause and control of sugarcane mosaic."

We are delighted at this additional honor to Dr. Brandes who has worked so long, so diligently and so successfully in developing new varieties of sugarcane for our members.

We congratulate him upon this merited honor and trust it will encourage him to continue his excellent work for many years.

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### CROP NEWS

**Assumption Parish.** The sugarcane crop in Assumption Parish is looking very promising, according to a report received from E. J. Lousteau, county agent, dated July 12th. Mr. Lousteau says everyone that he has spoken to is well pleased with the prospects and that the rainfall has been very favorable thus far this season. It is interesting to note from Mr. Lousteau's report that the corn crop, although planted late this season is, nevertheless, very good on many of the farms in Assumption Parish.


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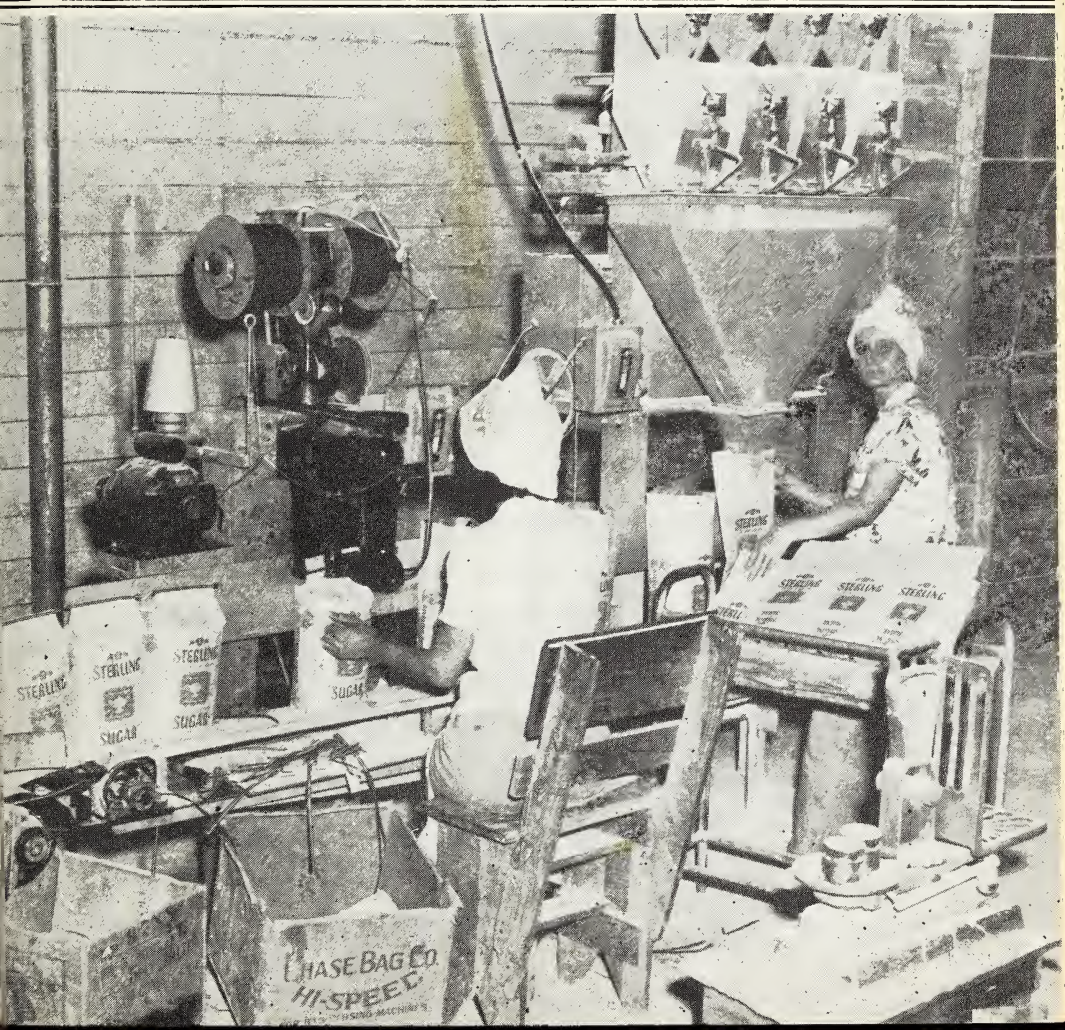

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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

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Cover Pictures by Metcalf Studio, 504 Willow Street, Franklin, La.

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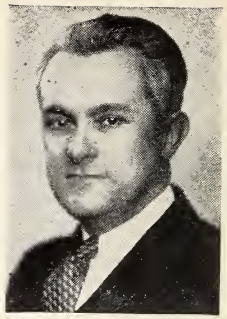
# IN WASHINGTON WITH C. J. BOURG



**Correspondence from Secretary Brannan**

July 12, 1949

Honorable Allen J. Ellender
United States Senate
Dear Senator:

This is in reply to your letter of June 15, 1949 concerning the re-allocation made June 10, 1949 of a deficit of 200,000 short tons, raw value, of beet sugar. We can understand your concern with any action that might affect the raw sugar market in a manner contrary to the interests of the Louisiana sugar producers. As you observed in your letter, the re-allocation had no effect on the market.

There appears to be a certain amount of confusion between the re-allocation of deficits and revisions in the determinations of total consumption requirements. Section 201 of the Sugar Act of 1948 provides for determinations of the quantity of sugar needed each year to meet the requirements of domestic consumers. The determination of these requirements is based on a consideration of the previous level of distribution, surpluses or deficiencies in inventories, and other conditions, including the price at which the determined quantity of sugar can be sold. As you point out, the Act requires that consideration be given to a quantity which may be sold at a price equal to the average 1947 ceiling price level adjusted for changes in the index of cost of living. The objective of the Act is, as you know, to provide a supply of sugar that will be consumed at prices which will not be excessive to consumers, and which will fairly and equitably maintain and protect the welfare of the domestic sugar industry. Revisions in these annual determinations may become necessary when actual distribution over a continued period differs materially from anticipated requirements, or when other conditions, including prices, differ sufficiently from those to which consideration was given in accordance with Section 201 of the Act.

The consumption requirement determination of 7,250,000 short tons, raw value, for 1949 has been generally accepted throughout the country as reasonably calculated to achieve the dual purpose of protecting the interests of producers and consumers. Although there is still a gap between the 1947 average ceiling price adjusted for changes in the cost of living index and the quoted wholesale price of refined sugar, the gap has narrowed considerably during the past twelve months. For the calendar year to date, sugar distribution has been nearly 300,000 tons above that for the corresponding period last year. Clearly, therefore, we have no basis for undertaking to reduce the determination made last December as to consumption requirements for 1949.

The re-allocation of deficits is distinctly different from the making or revising of a consumption requirements determination. The re-allocations of deficits are provided for in Section 204 of the Act. This section of the Act requires the Secretary of Agriculture to determine

(Continued on page 324)

# PRESENT FERTILIZER PRACTICES IN LOUISIANA

*by Emile A. Maier*

*Presented at the Meeting of the Agricultural Section, Houma, La., June 22, 1949*

Fertilizer has been used in the Louisiana sugar cane fields as a general field practice since the memorable fertilizer experiments carried on by Dr. Wm. C. Stubbs, when the Sugar Experiment Station was located at the present site of Audubon Park in New Orleans. A few of our soils respond profitably to the use of other food elements in connection with nitrogen, but, the larger acreage, by far, is fertilized with nitrogen alone—so, this discussion will be entirely on the use of nitrogen as a fertilizer.

In 1947 standing orders to meet fertilizer requirements were cancelled by sales agents at almost the last minute, and some planters in Louisiana were faced with the problem of using any nitrogen available, or doing without. Fortunately, some years before, an experiment carried out at Elm Hall Plantation showed that aqueous ammonia could be used as a satisfactory fertilizer for the cane crop.

Louisiana planters have always considered several factors in choosing a fertilizer. Of first importance is the securing of a nitrogen fertilizer which will produce the best results in sugar per acre. Many trials have been made with different materials from time to time, and for all practical purposes it has been found that regardless of the source of the nitrogen, the sugar cane responds equally well. The second, and a very important consideration, is that of cost. The choice of nitrogen fertilizer through the years, and especially at the present time, is that form of nitrogen which is the cheapest, not only in initial cost, but when applied to an acre of cane. Possibly the cheapest form of nitrogen today is anhydrous ammonia. It may be readily bubbled through water to produce an aqueous form of ammonia, which may be stored in any suitable container that ammonia fumes will not attack.

The use of nitrogen in either ammonia form entails some expense for equipment to handle and distribute it.

### Aqueous Ammonia

The University of Tennessee, Circular No. 87, "The Tennessee Liquid Fertilizer Distributor" by M. A. Sharp, describes a Squeege pump. The pump recommended by this circular was first used in 1947 by Godchaux interests and is still being used to some extent on some properties today. It is a positive displacement pump having a set of four rollers operating against a flexible rubber hose, or hoses. The hoses are pulled under tension in a semicircle around the rollers. As the rollers revolve, a certain amount of liquid is squeezed through the rubber hoses. This pump is attached to the power takeoff of a tractor and may, or may not, be controlled by a clutch. An ordinary globe valve controls the flow of ammonia through the hoses from the tractor's storage tanks which are usually two 55 gallon drums. The amount of ammonia applied is regulated by the inside diameter size of the rubber hose (or hoses) used, as well as by the size sprockets used to couple the pump to the tractor power takeoff.

This pump is a positive metering pump as long as the rubber tubes retain their original shape. They stretch: due to heat, wear from the rollers and the action of the ammonia solution, hence it becomes necessary to watch the output of a machine rather closely, and to make such necessary adjustments to the rubber hoses that the proper rate

(Continued on page 321)

### Sorgo Sirup

The acreage of sorghum to be harvested for sirup is indicated at 94,000 acres. This is 15 percent below last year, and by far the smallest acreage of record (1919 to date).

### Sugarcane for Sirup

The acreage of sugarcane for sirup is estimated at 72,000 acres for 1949, a decrease of 11 percent from the 81,000 acres harvested last year. Acreage of this crop has declined sharply during the past several years and is now at the lowest level of record beginning in 1909. Lower acreages are estimated this year for most of the 7 States growing the crop. In Louisiana, and some other States, a heavy carryover of sirup from the 1948 crop is reported still on hand.

### Sugarcane for Sugar and Seed

The acreage of sugarcane for sugar and seed is estimated at 346,400 acres, an increase of 4 percent over 1948 and the highest acreage on record. The Louisiana crop is estimated at 309,000 acres, compared with 297,000 acres harvested last year. In Florida, an estimated 37,400 acres is expected to be harvested for sugar and seed compared with 36,600 acres in 1948.

Prospective production of cane for sugar and seed is indicated at 8,032,000 tons based on July 1 conditions. This compares with 6,847,000 tons produced in 1948 and a 10-year average of 5,952,000 tons.

In Florida, where the crop is grown under water control, above average yields are expected. In Louisiana, excessive moisture retarded field work early in the season, but favorable condition during May enabled farmers to make excellent progress cultivating. Frequent rains in June interfered somewhat with control of grass and proper lay-by of the crop, particularly in the southern portion of the Belt. However, additional rain would be beneficial in scattered areas. Stands are generally good, and although there was rapid growth during June, the crop is still a little backward in a few sections. Most sugarcane was laid-by in June, and with continued rains normal growth should be attained soon in all areas. Condition of the crop as a whole is good and July 1 yield prospects in Louisiana are the best in years.

### Sugar Beets

The national sugar beet crop is indicated at 9,585,000 tons. This compares with 9,422,000 tons produced last year and the 10-year average of 10,145,000 tons. July 1 prospects were for a production in excess of last year in all major States except Washington, Oregon, Utah, Idaho and California.

The indicated yield per acre at 13.4 tons compares with 13.6 for 1948 and the average yield of 12.7 tons per acre.

The planted acreage of sugar beets is estimated at 767,000 acres, 4 percent below the 799,000 acres planted for the 1948 crop. Most of the Lake States increased their 1949 plantings, but in the Western States smaller planted acreages are reported than in 1948 for all important producing States except Colorado and Washington.

Weather conditions to date generally have been favorable, and with a better supply of labor in most States, abandonment is expected to be less than average. A total of 716,000 acres is estimated for harvest this year compared with 694,000 acres in 1948 and 796,000 acres, the 10-year average. In Colorado an 18 percent increase is expected in acreage harvested, but in California a decrease of 17 percent is indicated. Subsequently higher acreage for harvest are estimated for all of the Lake States.

# THE BARRAS QUARTER DRAIN PLOW

*By Clegg Caffery, Columbia Sugar Company, Franklin, Louisiana, Presented at the Meeting of the Agricultural Section, Houma, La., June 22, 1949*

Through the development of dragline ditching equipment of the straddle ditch and side arm pull types, and the use of conventional draglines, bulldozers, and graders, the maintenance of the lateral ditches and major canal outlets of the drainage system of the sugar cane plantation has become a highly mechanized operation, and spoil can readily be distributed uniformly over the fields.

Heretofore the only method available for maintaining the interior drainage of the cuts has been by conventional mule plowing, followed by removing the loose dirt and opening the "eyes" with hand shovels. Where well done this type of quarter drain maintenance has been very satisfactory. Labor competition for field cultivation operations has often resulted in a relatively poor type of quarter drain work, and the mechanical solution of this problem has been considered to be of very great importance.

Mr. Herbert Barras of Baldwin, Louisiana has recently developed a quarter drain plow for the Louisiana sugar cane fields which is indeed welcomed into the family of sugar cane farming implements.

The invention of Mr. Barras' is the culmination of 7 years work, during this period much time, labor and money were put forth to develop the idea.

The machine, weighing 380 lbs., is powered by a 10-horsepower air cooled Onan engine. The engine at the rate of 2700 rpm, drives the impeller of the machine at 340 rpm. The impeller is 18 inches in diameter and shapes the drain to the semi-circle. The machine is mounted on 4 six-inch rubber wheels, which gives it a low center of gravity and makes for easy handling in the drain. By the action of 3 cutting fingers and 3 kicking bars the quarter drain dirt is thrown and spread out over an area of 5 yards each side of the drain. This is done as the machine is being pulled through by a mule. Mr. Barras claims this machine will move as much dirt as a 1/2 yard dragline.

From experience we have found that under normal conditions the machine will clean on the average of 100 acres per day. Whether it cleans more or less will depend on the concentration of tractors in the area. We have found the implement can keep up with 5 to 7 tractors under normal operating conditions. The labor saved is shown by the fact that shovels and plows necessary to keep up with the above number of tractors can be dispensed with as only one man is needed to operate the drain plow. Work done is far superior to hand work as the "eyes" are opened and a smooth, wide semi-circular drain is put down. An indirect advantage is one of better drainage due to better drain work.

The machine is foolproof and only requires proper cleaning and oiling to give good service. Maintenance includes greasing the wheels twice a day, changing the oil of the oil filter once a day, and changing the crankcase approximately once a week. Air cleaners developed during the war keeps internal dirt and grit to a minimum.

# SUGAR BULLETINS

*Census of Sugar Manufacture*

The Bureau of the Census has just released a report on the manufacture of sugar and related products, which reveals many interesting facts and trends in the industry. This report covers Mainland raw cane sugar and syrup manufacturing, cane sugar refining, and beet sugar production. Sugar production in the territories and possessions is not covered.

*Mainland Raw Sugar and Syrup*

The report includes all census data on sugar for the period 1909 to 1947. During this period, the number of Mainland raw cane sugar and syrup establishments dropped from 214 to 82. The average monthly number of employees in all of these establishments, however, has remained about the same, which indicates concentration of production in larger units.

The total 1947 value of the products of these 82 establishments was reported at $60,135,000. This compares with a total value of $30,621,000 for the 214 establishments operating in 1909. A low point in value of products was reached in 1927, when the Louisiana Sugar Industry was nearly wiped out by sugarcane diseases.

In 1947, average monthly employment in Mainland cane and syrup mills was 4,635 persons against 5,115 in 1909. Of the 82 establishments, 12 employed less than 10 persons, 7 employed 10 to 19 persons, 29 employed 20 to 49 persons, 20 employed 50 to 99 persons, and only 14 employed 100 or more people. The 1947 seasonal employment peak came in November and December, when about 10,500 people, including salaried employees, were working in sugarcane and syrup mills. Less than 4,000 people were employed in any month of the year from January to September, inclusive, with a low of 2,900 employees in May.

*Refineries*

The number of cane sugar refineries operating in continental United States increased from 19 in 1909 to 25 in 1947. The largest number operating in any year was the 27 reported for 1939. The total value of products for 1947 was reported at $818,430,000. This item for Mainland refineries has shown substantial, although erratic, increase since 1909, when the total value of products was reported at $248,629,000.

Employment in the cane sugar refining industry has been much more uniform than that in other branches of the industry. This is true whether the comparison is made on a year-to-year basis or on a seasonal basis. Employment has shown a slight upward trend since 1909, but since 1921 employment has been remarkably regular from year to year. During 1947, monthly employment varied from a low of 15,950 in January to a high of 18,439 persons in August.

The refineries employ a far greater number of people per establishment than do other branches of the industry. Five refineries employed less than 250 people, 5 employed 250 to 499, 8 employed 500 to 999, and 7 employed more than 1,000 people.

*Beet Sugar Processors*

In the beet sugar industry, 74 processing establishments operated in 1947, against 58 establishments in 1909. At the high point, 92 units were in operation in 1921. In line with other branches of the industry, due partly to higher prices and partly to increased production, the value of products increased from $48,122,000 in 1909 to $262,827,000 in 1947.

The expansion in this branch of the domestic sugar industry is indicated by the total number of employees as well as the total value of products. The number of persons working in beet sugar factories rose from 2,320 in 1899 and 8,388

in 1909 to 13,412 in 1947. The high point of employment was reached in 1941, when 92 processing units operated and 16,008 persons were employed. The 1921 beet sugar production, however, was 1,086,000 tons, against 1,463,000 tons produced in 1947, even though employment was about 15 percent lower in the latter year. The seasonal peak of employment in the beet sugar industry comes from October to December, with a high of 28,453 persons reached in October 1947, against a low of 6,488 persons in March.

## CROP NEWS BY PARISHES

**St. Mary Parish.** P. J. deGravelles, county agent of St. Mary Parish, advises us that the fields in his district have been getting good rains during the past two weeks and that the cane crop is growing satisfactorily. The height of the canes, he reports, has now reached normal. He goes on to say that the prospects are good for the crop and that if favorable weather prevails dring the balance of the growing season the yield of sugar cane in his district should be about 10% above that of last year. Although the corn crop was planted late this year it, too, is good.

**Pointe Coupee Parish.** Reporting from New Roads on July 11th, A. B. Curet, county agent of Pointe Coupee Parish, states that "Our cane crop has made splendid progress during the past month. It has caught up some of its deficiency in growth and most of it is up to normal for this season of the year." Mr. Curet considers the prospects for a good crop in his district to be very promising.

**Iberia Parish.** Reporting on July 9th W. E. Williams, county agent of Iberia Parish, had the following to say about the conditions in his district.

"The sugarcane crop is showing up well in Iberia Parish at the present time. We have had too much rain in certain sections of the Parish but just about enough in other sections. In general I consider we have a very promising cane crop this year and if good weather prevails until harvest our farmers should make just about a normal crop. I measured jointed cane on July 4th and found some joints as high as 4½ feet. Of course I consider this out of the ordinary but there is a lot of cane jointed 18 inches to 2 feet."

**West Baton Rouge Parish.** W. E. Camus, county agent of West Baton Rouge Parish advised us on July 9th that the sugarcane crop in his district this year appears to have "better average stand and growth than last year." Most of the fields, Mr. Camus states, have had some rain and the crop is growing fine. He believes that with sufficient rainfall the prospects for a good year are better this year than they were last year.

## FERTILIZER

(Continued from page 317)

of application is maintained.

The Yale & Towne ammonia pump No. 20-D tri-rotor pump is now being used. Unfortunately, it does not maintain a steady rate of flow for a given setting, and some adjustment throughout the day is necessary. This year, a pump developed by Mr. Russell Ramp of the U.S. D.A. is under trial. It is an all steel neoprene paddle type, positive displacement pump. To govern the rate of application it is necessary to use different size driving sprockets. This, of course, is objectionable only where it is necessary to apply different amounts of fertilizer in several fields during the day. The pump meters a definite, constant amount.

Rubber hose and pipe carry the ammonia liquid to the distributing

shanks which are usually hung on the front end of the chopper, so that the chopper will cover the fertilizer immediately. As a rule both sides of a single row are fertilized as the tractor goes down the row. Two row applications have been tried but some difficulty was encountered in getting power distribution to the rows. An article on the use of Aqueous Ammonia fertilizer for sugarcane, giving full details, appeared in the December 1947 issue of SUGAR Magazine.

Aqueous ammonia containing 31.1% ammonia (%$NH_3$ by weight) may be purchased direct from the manufacturer. The tank car capacity is about 28 tons. This material must be kept under 6 to 10 pounds pressure to prevent evaporation, hence storage tanks must be available. Up to 20 pounds air pressure is used to unload the tank car into the storage tank, field tank, or directly into the drums on the tractor.

To insure an adequate supply of fertilizer for the 1949 crop, the South Coast Corporation erected an ammonia mixing plant at their Oaklawn factory. A complete description of this installation with photographs appeared in the May 1949 issue of THE SUGAR JOURNAL.

Briefly the installation consists of the following:

6,000 gallon mixing tank
Cooling coil made of 480 lineal feet of 2 inch pipe
100 GPM centrifugal pump for ammonia liquor
Small pump for keeping water on cooling coil
Small tank to trap vapors from mixing tank
Adequate storage space

The mixing tank is partially filled with water and ammonia gas is bubbled through a circular pipe with 1/8 inch perforations at the bottom of the mixing tank. More water is added and the liquor is then kept circulating through the cooling coil back into the mixing tank until the proper concentration of ammonia liquid is obtained. Regular brix spindles are used to check the solution and when a concentration of 23% ammonia is reached the entire batch is pumped into the storage space. In this case steel hulled barges were used to hold the ammonia solution. The 23% ammonia solution will not build up pressure up to 100 degrees Farenheit. The small tank filled with water is used to trap the vapors which may come from the mixing tank, and this small tank is emptied periodically into the large mixing tank as the process is carried on.

One man operated the installation with ease. It takes about four hours to mix and pump into storage a 6,000 gallon batch of aqueous ammonia, 23% nitrogen.

### Anhydrous Ammonia

Anhydrous ammonia, as a source of nitrogen for sugar cane was tried out in a limited way in 1947, on field scale in 1948, and throughout the cane area to a large extent in the present season. Anhydrous ammonia is a colorless alkaline gas at normal temperatures and pressures. It possesses a sharp penetrating odor and will irritate the skin and especially the mucous membranes of the human body. More than ordinary plantation care should be used in the handling of this material.

Storage tanks for anhydrous ammonia must meet certain specifications, particularly as to pressure. The recommendation is that the tank should have a working pressure of 250 pounds per sq. in. A Corkens vapor pump is being used with satisfaction to unload anhydrous ammonia from the tank car to storage tanks or to mobile field tanks. It is readily possible to fill the tractor tank from storage by releasing pressure on the small tank through the vapor check. When unloading or loading ammonia gas, gas masks should be worn by the operator, and

an adequate supply of water should be kept handy, as ammonia is readily soluble in water, and the water may be used to counteract the effect of any gas which may come in contact with the worker.

Bulk storage tanks are often 30,000 gallon capacity, and should be covered to protect them from the direct rays of the sun. All tanks containing ammonia gas should never be filled to more than 85% of the rated capacity. Field tanks which carry the gas out to the cane fields are often 1,000 water gallon capacity, and are usually carried in trucks, or are equipped with wheels so that they may be readily moved from place to place. Tractor tanks of 110 gallon capacity are generally used.

The operator's control of anhydrous ammonia is secured through a pressure gauge and a valve which can be closely adjusted. Charts have been prepared which permit the operator to set the valve at a certain mark for a given tank pressure and tractor speed. This setting will distribute a definite quantity of ammonia gas per acre covered. At first, it was thought that application of proper amounts would be difficult. However, many users of this material have found that only normal checking of the equipment during the day permitted them to put out the desired amount of fertilizer.

Ammonia is carried from the release valve to the soil shanks which are usually set just in front of a tractor chopper or in front of each side of a two-row middle plow. Little trouble has been found when fertilizing two rows at once. To carry two rows, it is necessary that the valves be equipped with the proper size orifices.

For handling either type of ammonia, it is necessary to use iron fittings and rubber hose pipe which will withstand the action of ammonia and ammonia vapor. Gauges must be carefully constructed, as very small brass screws in pressure gauges have been attacked by the ammonia, and the gauges rendered useless. Some propane rubber hose pipe was used. This soon caused trouble, as the inner lining of the hose softened up and came loose from the body of the hose.

Care should be taken to keep filling pipes and couplings as clean as possible. Some difficulty has been experienced from dirt collecting on the diaphragm of the distributing unit and in the check valves.

### General and Conclusions

It cannot be stressed too strongly that the application of either form of ammonia to the soil should be performed when the soil is in a good state of tilth, to minimize loss from evaporation. Both should be covered to a depth of 6 to 7 inches. Many operators feel that this requirement will make for better farming practices as the field will be cultivated well and be in good condition when the fertilizer is applied.

Many users of both types are confident that the application of the gas or liquid form of nitrogen is less expensive than is the application of dry types of fertilizer. The tanks, gauges, pipes, etc., necessary for the applications do not interfere with the use of the tractors for other work between times when fertilizer is being applied.

Some difficulty has been encountered with the ground shanks bending and breaking off, especially in heavy soils. Such problems are met by strengthening the shanks, but a better solution is to have the soil in a better state of tilth before an attempt is made to apply the ammonia.

Sufficient data is not available to permit quoting figures of yields of sugar cane where either or both forms of ammonia have been applied in comparison with several kinds of

nitrogen fertilizer in the dry form. It may be safely said however that the results in sugar per acre from the applications of either form of fertilizer has been satisfactory. At least no great howl has risen from the cane planters. This is indeed fortunate, as the change from the dry forms of nitrogen was made of necessity and in a great hurry, at a time when there was no other recourse.

Two publications containing much useful information on this subject are:

1. "Ammonia as a source of Nitrogen", a bulletin (Preliminary May, 1947) from the Mississippi State College, Agricultural Experiment Station.
2. "Ammonia — Its Uses and Properties", a publication of the Commercial Solvents Corporation.

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## IN WASHINGTON

(Continued from page 316)

from time to time during the calendar year whether any domestic area, the Republic of the Philippines, or Cuba, will be unable to market the quota for such area. Whenever such finding is made, the Act requires that an amount of sugar equal to such deficit shall be reallocated to other areas. Obviously if deficits were not to be reallocated, the results would be equivalent to a reduction in the determination of the quantity required to meet consumer needs.

The basic facts behind the determination of a beet deficit are very simple. Only a small part of the annual production of beet sugar is marketed during the calendar year within which the beets are planted and grown. The bulk of each calendar year's marketings of beet sugar come from the beet crop grown in the preceding calendar year. The carry-over of 1948-crop beet sugar into 1949, together with the amounts of 1948-crop sugar processed in 1949, was only about 1,155,000 tons. Marketings of new crop beet sugar within the calendar year during which the crop was grown have never exceeded 420,000 tons. As you know, the quota for domestic beet sugar is 1,800,000 short tons, raw value. The estimate of actual plantings and the first forecast of sugar beet production in 1949 made on July 11, showed another small acreage in 1949. The determination made June 10, 1949, of a deficit of 200,000 tons in the 1949 marketings of beet sugar was consistent with these facts.

In view of your particular interest in the Louisiana sugar producing industry, I should like to call your attention to one of the Louisiana problems that concerns us greatly. During recent years the amount of sugar recovered per ton of sugarcane has declined substantially. The Louisiana average recovery per ton of cane for the five years 1937-1938 to 1941-1942, inclusive, was nearly 165 pounds of sugar. The average recovery for Louisiana cane crops declined during the war and post-war years, however, and reached a new low point of approximately 146 pounds of sugar per ton of cane from the last crop.

The significance of this problem becomes even more apparent in light of sugar recoveries by individual Louisiana mills. During the past season 10 Louisiana mills recovered less than 140 pounds of sugar per ton of cane, while 13 mills recovered in excess of 160 pounds. It is evident, therefore, that the reduction in the recovery of sugar per ton of sugarcane represents a material loss in income to the Louisiana sugar industry, and that the difference in recoveries by mills accounts for major differences in the income position found among the various mills and growers in the state.

We always appreciate your views

with respect to the administration of the Sugar Act and we shall appreciate your suggestions for aiding the Louisiana industry in overcoming its present producing problems.

Sincerely yours,
"Charles F. Brannan"
Secretary of Agriculture

---

July 11, 1949

Honorable Hale Boggs
House of Representatives
Dear Mr. Boggs:

This is in reply to your letter of June 15, 1949, concerning the recent re-allocation of a deficit of 200,000 short tons, raw value, in the domestic beet sugar quota.

Actions with respect to the re-allocation of deficits should not be confused with revisions in the determination of total sugar consumption requirements. Under Section 201 of the Sugar Act of 1948, the Secretary must determine the amount of sugar required each year to meet the needs of consumers. As you know, this determination takes into consideration the previous level of distribution, the level of sugar inventories and other factors, including the price of sugar, which will result from the determination. The Act requires that consideration be given to the relationship between sugar prices and the cost of living and that a supply of sugar be provided which will be consumed at prices which are reasonable to consumers and which will fairly and equitably maintain and protect the domestic sugar industry. The Act also gives the Secretary authority to revise the determination at any time it appears that requirements of consumers differ substantially from those provided in the determination or when other considerations, including price, make such revision necessary. We believe that the present consumption requirements determination of 7,250,000 short tons, raw value, for 1949 is one which fully protects the interests of both consumers and producers. It is true that there is still a gap between the 1947 average ceiling price adjusted for changes in the cost of living, and the present quoted wholesale price of refined sugar. However, this gap has narrowed substantially in recent months, while sugar distribution thus far this year has been approximately 300,000 tons greater than that for the corresponding period last year. It would appear, therefore, that we have no basis for reducing the present determination of sugar consumption requirements.

Deficit re-allocations present a distinctly different problem than the revision of the determination of sugar consumption requirements. Section 204 of the Act requires the Secretary to determine from time to time during the year whether


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any of the principal supplying areas will be unable to market its quota. The Act also makes it necessary that an amount of sugar equal to any determined deficit be reallocated to other areas in accordance with the pertinent provisions of Title II. It is obvious that if we were to ignore known deficits, the result would be the same as a reduction in the determination of sugar consumption requirements.

The determination of a beet deficit of 200,000 short tons was based on the following considerations: Only a small part of the annual production of beet sugar is marketed during the calendar year within which the beets were planted and grown. Most of the beet sugar marketed in each calendar year comes from beets which were produced in the previous calendar year. The carry-over of 1948-crop beet sugar into 1949, plus 1948-crop sugar actually produced in 1949, amounted to approximately 1,155,000 short tons. Historically, the marketings of new crop beet sugar within the calendar year during which the crop of beets was produced have never exceeded 420,000 short tons. These facts, together with the fact that another small beet acreage is anticipated in 1949, were considered by the Department in an appraisal of the likelihood of the domestic beet sugar industry meeting its quota of 1,800,000 short tons. The determination of a deficit of 200,000 short tons appears wholly reasonable in light of such facts as we have outlined.

You will recall that we have previously written you regarding certain problems concerning the Louisiana sugar industry, which undoubtedly are adversely affecting the incomes of sugar producers. We feel that the early solutions to these problems will be highly significant in improving the income position of Louisiana sugar producers. In reiterating the need for prompt solutions to such problems, we are not unmindful of our responsibilities under the Sugar Act to both producers and consumers. However, we believe that our actions have taken into consideration the interests of both groups.

We are always happy to have your views in connection with our responsibilities under the Sugar Act, and we hope that we may have your recommendations for assisting the Louisiana sugar industry in solving its difficult production problems.

Sincerely yours,
"Charles F. Brannan"
Secretary of Agriculture


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## SPECIAL STATISTICAL ISSUE

# *Are You Controlling Johnson Grass As Recommended, or Are You Doing A Half-Way Job???*

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# DISEASE TESTING AND INITIAL SEEDLING SELECTION WORK AT THE HOUMA STATION DURING 1948

*By Eaton M. Summers, Associate Pathologist, and E. V. Abbott, Senior Pathologist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture*[1]

Propagation of new seedling varieties, selection of commercial type canes and testing them for disease resistance continued to be the principal activity of the pathologists at the Houma station during the year. Approximately 21,000 seedlings of the '42 to '46 breeding years were examined in field plots and an additional 19,500 from the '47 breeding year were transplanted to the field as single stools. Notes on disease occurrence were made on all of these during the summer and selections for sucrose analyses and replanting were made in the fall, for a total of nearly 41,000 varieties that were examined in the field. Thirty-two foreign varieties were studied, and 2 of them, Co. 464 and N. Co. 310, were turned over to the agronomists. C. P. numbers of the '48 series were assigned to 162 varieties, seed of which was distributed to the agronomists at Houma and Baton Rouge. A summary of the numbers handled in various categories is shown in table 1. The objectives of the varietal improvement program were reviewed in our last year's report[2] and need not be further discussed here.

## '46 Series Seedlings

The first selections were made from the approximately 19,000 seedlings of this series growing as first stubble of the single stools. As shown in table 1, 2,750 were selected on the basis of disease re-

**Table 1. Summary of testing and distribution of seedlings and pathological observations on agronomic selections, foreign varieties, and prospective breeding material in the variety improvement program in 1948.**

| Classification | No. examined in field | No. inoculated with mosaic | No. inoculated with red rot | Number of Sucrose Analyses | | | | | No. replanted as | | C. P. numbers assigned |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | C. P. candidates | Pre-C. P. candidates | Single stools | Controls | Total | Pre-C. P. candidates | C. P. candidates | |
| '42 series from Houma | 245 | ------ | ------ | 239 | ------ | ------ | 25 | 264 | ------ | ------ | 3 |
| '43 series from Canal Point | 99 | ------ | ------ | 86 | ------ | ------ | 10 | 96 | ------ | ------ | 1 |
| '43 series from Houma | 632 | ------ | ------ | 138 | 392 | ------ | 63 | 593 | ------ | 25 | 4 |
| '44 series from Canal Point | 67 | ------ | ------ | 52 | ------ | ------ | 6 | 58 | ------ | ------ | |
| '45 series from Canal Point | 781 | 35 | ------ | 120 | 385 | ------ | 78 | 583 | ------ | 34 | 6 |
| '45 series from Houma | 339 | ------ | ------ | ------ | 325 | ------ | 35 | 360 | ------ | 51 | ------ |
| '46 series from Houma | 19,055 | ------ | ------ | ------ | ------ | 2,750 | 104 | 2,854 | 953 | ------ | ------ |
| '47 series from Houma | 19,107 | 21,599 | ------ | ------ | ------ | 238[2]<br>281[3] | 52 | 571 | 116 | ------ | ------ |
| Totals | 40,325 | 21,634 | ------ | 635 | 1,102 | 3,269 | 373 | 5,379 | 1,069 | 110 | 16 |
| **Parent & Foreign Varieties** | | | | | | | | | | | |
| Miscellaneous importations | 44 | 16 | 32 | 30 | ------ | ------ | 1 | 31 | ------ | ------ | 2 |
| U. S. Varieties | 12 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| **C. P. Varieties** | | | | | | | | | | | |
| In pathology plots[4] | | | | | | | | | | | |
| '46 series | 204 | ------ | 30 | ------ | ------ | ------ | 17 | 194 | ------ | ------ | ------ |
| '47 series | 194 | 194 | 194 | ------ | ------ | ------ | 30 | 215 | ------ | ------ | ------ |
| '48 series | ------ | ------ | 26 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| Grand Totals | 40,779 | 21,844 | 282 | 665 | 1,102 | 3,269 | 421 | 5,819 | 1,069 | 85 | ------ |

[1] Released to agronomists for testing.
[2] Analyzed also by hand refractometer.
[3] Analyzed by hand refractometer only.
[4] On heavy soil for study of root rot and seed rot injury.

istance and type for sucrose analysis, of which 953 were increased to -foot plots. The majority of the eedlings studied were from crosses hat have been proved to be good ources of commercial canes, but everal new combinations of parents vere also available for study in this eries. The most promising one rom the standpoint of the number f selections combining good type vith other desirable characteristics vas C. P. 29/103 x C. P. 43/74, vhich, based on this study of one ear's progeny, appears to be one f the best combinations ever made t Canal Point. The best selections vere characterized by vigorous tooling, satisfactory barrel diamter, moderate erectness, and satisactory height. Seventy-two percent f those selected from this cross for hemical analysis were replanted (four times the average of all other crosses), and 10 individuals appeared sufficiently promising to merit saving all of the seed. C. P. 43/74, which was available for the first time as a parent in the 1946 breeding season, imparted its vigor of stooling and stubbling to seedlings in all of the 5 crosses in which it was used.

Seedlings of C. P. 29/120, which were available for study on a progeny scale for the first time, were disappointing in vigor and physical characteristics. It had been hoped that this variety might be a good source of canes adapted to mechanical harvesting.

One cross with Co. 290 as the female and C. P. 1165 as the male was in this series. Out of 247 seedlings in the cross, only 4 were replanted. They were predominantly poor types, with small stalks, and the few that resembled Co. 290 in physical characteristics were weak. A few promising individuals have been found in crosses of Co. 290 with C. P. 29/320; five were assigned C. P. numbers of the '48 series.

Six crosses with *Saccharum robustum* ancestry, the wild New Guinea cane, were studied in this series, with a total of 2,800 seedlings in the field. The percentage of seedlings of this parentage having even minimum commercial requirements in the way of physical characteristics was very low, averaging less than 1 percent. Efforts to transmit the tremendous vigor of this species to commercially adapted canes have not been very successful. From the many crosses that have been made with the original wild cane or its descendents as parents, 57 seedlings have been assigned C. P. numbers, but of these none has been advanced by the agronomists to the test field stage. A major defect in seedlings of this parentage is their tendency to lodge badly, and in those seedlings of even passable commercial type, the vigor as a rule has been very much diluted.

### '47 Series Seedlings

In the greenhouse, approximately 40,000 seedlings were grown from 59 crosses of the '47 breeding season, 27,000 of which were potted and 19,500 transplanted to the field after eliminating those showing mosaic following artificial inoculation. Under our normal procedure, the first selections from these would not have been made until the fall of 1949, but because of favorable growing weather during the fall and the absence of a freeze until late December, many of them made growth comparable with normal plant cane, and it was possible to make selections for replanting during that month. Since the regular fall program was out of the way, time was available for making a comparison of refractometer Brix with laboratory Brix readings on the juice of the selections. Hand refractometer Brix readings were made on a composite sample of juice obtained with a special punch[3] from the third joint from the bottom and the uppermost joint with a mature leaf sheath, from each of 5 stalks in the selected stool. The same 5

Table 2. Field records and disease ratings on foreign varieties at Houma during 1948.

| Variety | Country of Origin | Growth as Plant cane | Stubbling (1949) | DISEASES | | Sucrose % Co. 281 |
|---|---|---|---|---|---|---|
| | | | | % Mosaic | Red rot rating | |
| B. 37193 | Barbados | Poor | Good | ------ | V. suscept. | ------ |
| B. 40105 | " | Fair | Good | ------ | V. suscept. | 98 |
| B. 40116 | " | Poor | Poor | ------ | V. suscept. | 89 |
| B. 41211 | " | Fair | Fair | Trace | V. suscept. | 89 |
| B. 41227 | " | Good | Good | ------ | V. suscept. | ------ |
| Ajax | Australia | Poor | V. poor | 50 | V. suscept. | ------ |
| Atlas | " | Poor | Poor | 50 | Susceptible | ------ |
| Badila Fiji | " | Poor | Good | 50 | V. suscept. | ------ |
| Cato | " | Poor | Fair | ------ | V. suscept. | ------ |
| Trojan | " | Poor | Fair | 50 | Mod. suscept. | ------ |
| Q. 28 | " | Good | Good | 40 | V. suscept. | 80 |
| Q. 47 | " | Fair | Good | ------ | Mod. resist. | 93 |
| Q. 48 | " | Fair | Fair | ------ | V. suscept. | 83 |
| Q. 49 | " | Fair | Good | ------ | V. suscept. | 89 |
| Q. 50 | " | Excellent | Good | ------ | Susceptible | 97 |
| M. P. R. 336 | Puerto Rico | Poor | Fair | ------ | Mod. resist. | ------ |

stalks were immediately cut and taken to the laboratory for analysis. Agreement in the results from the two methods was sufficiently good to justify using the hand refractometer alone in future selection work in single stool nurseries. This will mean a considerable saving in time and expense of cutting and processing samples for laboratory analysis.

From the 10,000 seedlings examined as plant cane, 116 were selected for replanting. Further selections will be made in the first stubble in 1949.

## '48 Series Seedlings

An estimated 113,600 seedlings of the '48 breeding season from 182 crosses were grown in the greenhouse from our share of the seed produced at Canal Point under the new cooperative agreement with Louisiana State University. Since this number was considerably in excess of what could be potted or transplanted to the field, it was necessary to establish quotas for potting and transplanting from many of the crosses. All of the seedlings were saved from those crosses which previous experience with them or good characteristics of the parents indicated would be of value. The numbers saved from the other crosses will be sufficient to appraise them to determine whether they should be repeated in the future. Approximately 44,000 seedlings were potted and it is expected that from 30-35,000 will be transplanted to the field.

Approximately two-thirds of the crosses received this year were combinations that had not previously been tested on a progeny scale at Houma, although some of them may have been studied at Canal Point. Some of them were from parents that had not been used previously and others were new combinations of parents. In about half of the crosses one or both of the parents have either only recently become available for breeding, they have not flowered previously, or their possible value as parents has only recently been determined. The search for new male parent varieties which has been pressed by Dr. Sartoris for years, has also borne fruit during the last two breeding seasons when several of them bloomed or were available for the first time. Among these may be mentioned C. P. 36/105 used in 19 crosses in 1948, C. P. 43/74 in 17 crosses, C. P. 44/156 in 9 crosses.

## Foreign Varieties

Table 2 summarizes the records on 16 foreign varieties studied at Houma last year for the first time, and that were not listed in our last report. Only 8 made sufficient growth to justify a sucrose analysis, and 6 of these were submarginal in sucrose content. Most of them were susceptible to red rot.

[1] Acknowledgment is made to the American Sugar Cane League for financial assistance in handling the seedlings; to L. G. Davidson for making the sucrose analyses listed in table 1; and to R. L. Tippett for assistance in conducting the work reported in this paper.

[2] Abbott, E. V., Summers, Eaton M., and Sartoris, G. B. Disease testing and initial seedling selection work at the Houma Station during 1947. Sugar Bulletin 26:356-361. 1948

[3] This punch was designed and kindly provided by the Experiment Station of the Hawaiian Sugar Planters' Association, to whom we are indebted.

## RECAPITULATION OF FINAL REPORTS OF LOUISIANA SUGAR CANE FACTORIES, CROPS 1939-1948, By Mr. Grayson of P. & M. A.

| Total for State Factories<br>Year | 68<br>1939 | 66<br>1940 | 65<br>1941 | 65<br>1942 | 65<br>1943 | 70<br>1944 | 63<br>1945 | 60<br>1946 | 59<br>1947 | 59<br>1948 |
|---|---|---|---|---|---|---|---|---|---|---|
| Crop Days | 63.82 | 39.85 | 52.35 | 65.20 | 82.33 | 75.65 | 74.50 | 66.20 | 68.50 | 78.8 |
| Lost time % total time | 13.00 | 15.91 | 19.63 | 19.49 | 24.87 | 23.74 | 21.28 | 19.44 | 28.42 | 22.98 |
| Cane: Ground (1000 tons) | 5,083 | 2,923 | 3,946 | 4,734 | 5,388 | 4,928 | 5,149 | 4,483 | 4,045 | 5,256,644 |
| % Total Cane Ground | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Tons Ground per Hour | 56.10 | 54.25 | 55.83 | 55.27 | 55.84 | 51.59 | 55.40 | 55.57 | 55.48 | 60.47 |
| Extraction N. J. % Cane | 75.66 | 75.16 | 75.39 | 74.41 | 74.87 | 73.27 | 73.47 | 72.32 | 70.61 | 71.90 |
| Sucrose Extraction, % | 91.72 | 91.30 | 91.74 | 91.14 | 90.93 | 90.13 | 91.08 | 90.06 | 89.06 | 89.58 |
| Saturation % Cane | 15.76 | 15.00 | 15.66 | 17.71 | 17.07 | 16.13 | 13.13 | 16.02 | 19.40 | 17.74 |
| Fiber % Cane | 13.57 | 13.06 | 13.38 | 13.99 | 13.86 | 14.25 | 14.17 | 14.84 | 15.15 | 14.95 |
| Java Ratio | 78.23 | 78.19 | 78.14 | 77.63 | 78.17 | 77.31 | 76.76 | 75.82 | 75.39 | 75.83 |
| Analysis | | | | | | | | | | |
| Crusher Juice Brix | 16.75 | 15.81 | 16.27 | 16.83 | 16.77 | 16.32 | 16.19 | 16.50 | 16.53 | 16.32 |
| Brix Factor (Final) | 97.25 | 97.22 | 97.30 | 97.21 | 97.08 | 97.43 | 97.34 | 97.21 | 97.52 | 97.12 |
| Sucrose Factor (Final) | 94.89 | 94.98 | 95.07 | 95.06 | 94.94 | 95.05 | 95.18 | 94.40 | 95.14 | 94.45 |
| Normal Juice Brix | 16.29 | 15.37 | 15.83 | 16.36 | 16.28 | 15.90 | 15.76 | 16.04 | 16.12 | 15.85 |
| Normal Juice Sucrose | 12.63 | 11.93 | 12.14 | 12.70 | 12.39 | 11.93 | 11.86 | 12.31 | 12.33 | 11.91 |
| Normal Juice Purity | 75.53 | 77.62 | 76.69 | 77.63 | 76.10 | 75.03 | 75.25 | 76.74 | 76.49 | 75.14 |
| Factory Syrup, Brix | 59.24 | 58.52 | 59.68 | 57.91 | 58.53 | 58.08 | 57.41 | 57.20 | 56.92 | 57.22 |
| Residual Juice Brix | 6.22 | 5.84 | 5.88 | 5.93 | 6.03 | 6.34 | 6.40 | 6.51 | 6.27 | 6.50 |
| Bagasse Sucrose | 3.04 | 3.07 | 2.93 | 3.07 | 3.11 | 3.07 | 2.97 | 3.08 | 3.16 | 3.08 |
| Bagasse Moisture | 47.96 | 48.94 | 48.64 | 49.00 | 49.09 | 49.38 | 48.80 | 49.23 | 49.87 | 49.28 |
| Bagasse Fiber | 47.88 | 46.95 | 47.56 | 46.81 | 46.67 | 46.29 | 46.88 | 46.39 | 45.69 | 46.19 |
| Press Cake Sucrose | 4.45 | 3.93 | 3.78 | 4.24 | 4.14 | 3.81 | 4.02 | 3.98 | 3.86 | 4.18 |
| Sucrose Balance | | | | | | | | | | |
| Molasses, Sucrose % Cane | .964 | .969 | .961 | .945 | 1.067 | 1.047 | 1.130 | 1.001 | 1.012 | 1.084 |
| Press Cake, Sucrose % Cane | .082 | .082 | .078 | .081 | .081 | .104 | .104 | .120 | .168 | .191 |
| Undetermined, Sucrose % Cane | .179 | .141 | .183 | .198 | .253 | .266 | .212 | .297 | .365 | .273 |
| Bagasse, Sucrose % Cane | .860 | .854 | .824 | .919 | .925 | .956 | .853 | .983 | 1.069 | .997 |
| Total Losses, Sucrose % Cane | 2.085 | 2.046 | 2.046 | 2.143 | 2.326 | 2.373 | 2.299 | 2.401 | 2.614 | 2.545 |
| Sugar, Sucrose % Cane | 8.328 | 7.775 | 7.933 | 9.229 | 7.875 | 7.322 | 7.266 | 7.486 | 7.157 | 7.017 |
| Total, Sucrose % Cane | 10.413 | 9.821 | 9.979 | 10.372 | 10.201 | 9.695 | 9.565 | 9.887 | 9.771 | 9.562 |
| Pounds 96° Sugar M&E t/c | 173.68 | 161.98 | 165.28 | 171.44 | 164.06 | 152.50 | 151.37 | 155.95 | 149.10 | 146.19 |
| Gallons, Final Molasses, M&E t/c | 6.64 | 6.28 | 6.69 | 6.59 | 7.16 | 7.38 | 7.48 | 6.74 | 6.78 | 7.15 |
| Boiling House Efficiency Number | 98.68 | 98.00 | 98.69 | 98.29 | 97.10 | 96.64 | 96.04 | 95.64 | 93.73 | 94.39 |

## LOUISIANA MILL REPORTS

### Production of Sugars (tons, 2,000 lbs.), Syrup, 1st Molasses, 2nd Molasses, and Blackstrap—1939-1948

| | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 |
|---|---|---|---|---|---|---|---|---|---|---|
| Raw Sugar 96° | 356,166 | 177,021 | 252,176 | 305,802 | 316,719 | 259,324 | 232,442 | 180,954 | 211,305 | 298,371 |
| Clarified | 8,423 | 1,294 | 2,731 | 4,233 | 17,402 | 19,892 | 26,010 | 28,877 | 1,378 | 325 |
| Turbinados | 23,345 | 16,373 | 25,425 | 25,889 | 34,262 | 40,405 | 56,585 | 53,162 | 16,243 | 22,325 |
| Granulated | 45,145 | 37,464 | 31,991 | 51,182 | 60,663 | 46,924 | 42,035 | 56,633 | 60,379 | 65,804 |
| Washed Raws | 939 | 1,236 | 7,776 | 8,694 | 0 | 0 | 0 | 0 | xx0 | 0 |
| String—Others | 2,844 | 1,407 | 2,144 | 2,529 | 2,924 | 2,834 | 3,389 | 1,129 | 0 | 755 |
| Total Sugars (Raw Value) | 436,862 | 239,095 | 322,243 | 398,330 | 431,970 | 369,379 | 375,398 | 331,128 | 296,932 | 397,293 |
| Sirup—Gallons | 1,824,127 | 1,567,318 | 1,705,220 | 1,802,624 | 4,458,137 | 2,684,925 | 7,920,811 | 3,098,897 | 3,118,159 | 494,726 |
| 1st Molasses—Gallons | 1,896,291 | 1,224,042 | 2,142,987 | 3,301,640 | 5,936,230 | 3,661,082 | 8,832,379 | 9,596,030 | 2,179,258 | 2,192,738 |
| 2nd Molasses—Gallons | 3,214,954 | 1,481,536 | 2,734,639 | 4,420,460 | 4,754,073 | 3,260,918 | 6,348,928 | 3,993,164 | 2,966,514 | 1,823,747 |
| Blackstrap—Gallons | 27,891,109 | 15,384,342 | 21,560,072 | 23,103,373 | 30,887,281 | 28,716,392 | 28,456,351 | 21,231,304 | 21,676,476 | 33,279,520 |

xx Included in clarified production.

## CROPLAND—PROPORTIONATE SHARE—PLANTED ACRES OF LOUISIANA SUGARCANE FARMS PARTICIPATING IN THE SUGAR PROGRAM (SUGAR ACT OF 1937) BY PARISHES, FROM A.. A. A. REPORTS

| PARISHES | Cropland (Acres) | | | | Proportionate Shares (Acres) | | | | Total Planted (Acres) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1945 | 1946 | 1947 | 1948 | 1945 | 1946 | 1947 | 1948 | 1945 | 1946 | 1947 | 1948 |
| Ascension | 27,031 | 25,412 | 23,670 | 24,564 | 7,160 | 10,899 | 12,417 | 13,436 | 11,153 | 12,310 | 12,779 | 13,507 |
| Assumption | 44,394 | 45,164 | 45,176 | 47,344 | 25,868 | 25,569 | 28,343 | 29,905 | 26,531 | 28,140 | 28,715 | 29,915 |
| Avoyelles | 8,699 | 7,900 | 8,637 | 9,729 | 1,100 | 1,511 | 2,034 | 2,822 | 2,320 | 2,181 | 2,834 | 3,057 |
| East Baton Rouge | 823 | 822 | 823 | 1,344 | 249 | 218 | 277 | 585 | 249 | 232 | 277 | 585 |
| Iberia | 77,191 | 75,478 | 75,067 | 76,443 | 30,901 | 29,652 | 34,432 | 35,766 | 34,190 | 35,826 | 37,328 | 35,839 |
| Iberville | 46,724 | 46,938 | 43,290 | 43,825 | 20,864 | 19,084 | 21,163 | 21,453 | 21,917 | 22,366 | 22,511 | 22,051 |
| Lafayette | 34,001 | 30,729 | 26,839 | 29,276 | 9,442 | 8,624 | 9,570 | 10,094 | 9,623 | 10,019 | 9,736 | 10,109 |
| Lafourche | 52,770 | 54,410 | 54,775 | 54,696 | 23,536 | 23,646 | 28,257 | 28,504 | 23,562 | 25,700 | 28,266 | 28,504 |
| Pointe Coupee | 38,567 | 35,991 | 56,434 | 35,769 | 10,170 | 9,916 | 11,159 | 11,314 | 10,535 | 11,316 | 11,540 | 11,316 |
| Rapides | 7,112 | 3,999 | 5,062 | 7,196 | 993 | 1,052 | 1,471 | 1,934 | 1,201 | 1,245 | 1,566 | 2,119 |
| St. Charles | 4,559 | 4,271 | 4,137 | 4,248 | 1,225 | 1,518 | 1,012 | 1,502 | 1,494 | 1,659 | 1,582 | 1,502 |
| St. James | 31,381 | 31,339 | 32,306 | 32,380 | 14,310 | 15,215 | 17,656 | 17,984 | 14,905 | 16,422 | 17,662 | 17,991 |
| St. John | 25,649 | 25,370 | 25,543 | 26,204 | 13,630 | 12,642 | 13,188 | 14,850 | 14,530 | 14,778 | 15,014 | 15,295 |
| St. Landry | 7,450 | 5,339 | 4,839 | 5,509 | 1,036 | 837 | 953 | 923 | 1,151 | 948 | 953 | 923 |
| St. Martin | 47,709 | 48,022 | 47,257 | 50,531 | 12,606 | 13,145 | 15,399 | 17,590 | 15,424 | 17,085 | 16,107 | 17,590 |
| St. Mary | 56,858 | 56,911 | 59,119 | 60,370 | 30,359 | 30,397 | 34,588 | 33,420 | 31,371 | 33,723 | 34,590 | 33,420 |
| Terrebonne | 58,197 | 57,716 | 57,677 | 58,427 | 33,268 | 31,601 | 35,122 | 34,802 | 33,273 | 34,521 | 35,180 | 34,807 |
| Vermilion | 23,417 | 23,035 | 18,483 | 20,242 | 3,388 | 4,848 | 4,992 | 4,566 | 5,849 | 6,369 | 5,775 | 5,079 |
| West Baton Rouge | 29,032 | 27,608 | 26,699 | 27,578 | 12,825 | 11,551 | 11,821 | 13,700 | 14,154 | 14,567 | 14,101 | 13,700 |
| West Feliciana | 12,656 | 12,655 | 14,568 | 14,568 | 3,614 | 3,547 | 3,553 | 3,688 | 3,823 | 3,960 | 3,700 | 3,688 |
| TOTAL | 634,220 | 619,118 | 610,670 | 630,243 | 256,544 | 255,479 | 287,407 | 298,838 | 277,255 | 293,376 | 300,216 | 300,997 |

## PROPORTIONATE SHARE ACRES HARVESTED FOR SUGAR—YIELD OF SUGARCANE PER ACRE AND YIELD OF RECOVERABLE SUGAR PER ACRE OF LOUISIANA FARMERS PARTICIPATING IN THE SUGAR PROGRAM (SUGAR ACT OF 1937) BY PARISHES FROM A. A. A. REPORTS

| PARISHES | Proportionate Shares Harvested for Sugar (Acres) | | | | Yield of Cane Per Acre Tons | | | | Yield of Recoverable Sugar per Acre CWT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1945 | 1946 | 1947 | 1948 | 1945 | 1946 | 1947 | 1948 | 1945 | 1946 | 1947 | 1948 |
| Ascension | 6,306 | 11,698 | 11,444 | 12,488 | 21.56 | 17.61 | 15.89 | 20.14 | 33.55 | 29.81 | 26.20 | 32.00 |
| Assumption | 23,890 | 27,570 | 26,084 | 27,641 | 24.65 | 18.00 | 17.54 | 21.06 | 38.73 | 30.32 | 29.69 | 33.63 |
| Avoyelles | 935 | 1,694 | 1,358 | 2,479 | 18.71 | 14.84 | 13.28 | 18.06 | 29.01 | 23.86 | 23.23 | 28.74 |
| East Baton Rouge | 235 | 232 | 264 | 517 | 21.87 | 20.84 | 17.31 | 21.49 | 36.04 | 33.33 | 26.53 | 34.18 |
| Iberia | 27,848 | 32,619 | 30,488 | 32,308 | 21.21 | 17.03 | 13.58 | 17.84 | 34.42 | 28.43 | 22.95 | 27.90 |
| Iberville | 18,852 | 21,249 | 18,891 | 19,419 | 21.50 | 18.99 | 15.88 | 20.24 | 34.37 | 30.78 | 26.43 | 31.45 |
| Lafayette | 8,572 | 9,569 | 8,279 | 9,158 | 19.08 | 15.29 | 10.35 | 12.79 | 33.22 | 27.10 | 18.65 | 20.84 |
| Lafourche | 22,061 | 25,693 | 26,202 | 26,490 | 23.23 | 17.91 | 16.56 | 19.61 | 37.18 | 31.14 | 28.20 | 31.99 |
| Pointe Coupee | 9,453 | 10,723 | 10,246 | 10,728 | 18.66 | 17.58 | 14.47 | 19.56 | 31.42 | 29.36 | 25.22 | 31.39 |
| Rapides | 920 | 1,127 | 1,387 | 1,842 | 25.38 | 22.76 | 19.15 | 21.02 | 40.96 | 38.15 | 33.85 | 34.92 |
| St. Charles | 909 | 1,659 | 883 | 1,362 | 20.00 | 13.95 | 14.07 | 20.39 | 30.94 | 22.20 | 24.25 | 34.82 |
| St. James | 12,905 | 16,331 | 16,422 | 16,868 | 23.84 | 17.95 | 16.57 | 20.27 | 35.93 | 30.82 | 28.83 | 33.48 |
| St. John | 12,399 | 13,777 | 11,944 | 13,654 | 20.42 | 17.32 | 15.84 | 19.24 | 31.66 | 30.57 | 27.54 | 32.86 |
| St. Landry | 912 | 934 | 884 | 898 | 15.23 | 14.50 | 12.64 | 17.86 | 24.83 | 23.26 | 22.31 | 28.35 |
| St. Martin | 11,302 | 14,974 | 13,159 | 15,645 | 21.09 | 17.22 | 14.57 | 18.86 | 34.00 | 28.38 | 24.44 | 28.84 |
| St. Mary | 27,356 | 33,501 | 31,205 | 30,234 | 22.43 | 17.05 | 14.74 | 18.14 | 36.84 | 29.71 | 24.78 | 29.20 |
| Terrebonne | 30,899 | 34,498 | 32,034 | 32,161 | 21.98 | 16.85 | 15.41 | 19.57 | 34.38 | 28.98 | 25.63 | 32.37 |
| Vermilion | 2,841 | 5,290 | 4,456 | 4,151 | 19.66 | 14.03 | 7.37 | 14.70 | 32.46 | 23.63 | 12.98 | 23.91 |
| West Baton Rouge | 11,781 | 12,681 | 9,963 | 12,468 | 19.79 | 17.84 | 13.69 | 20.76 | 32.17 | 30.32 | 23.05 | 33.22 |
| West Feliciana | 3,448 | 3,747 | 3,227 | 3,430 | 23.98 | 24.40 | 14.82 | 20.91 | 40.45 | 39.61 | 27.40 | 36.20 |
| TOTAL | 233,824 | 279,575 | 258,820 | 273,941 | 21.96 | 17.60 | 15.14 | 19.19 | 35.17 | 29.49 | 25.68 | 30.91 |

# SUMMARY OF FERTILIZER TESTS ON SUGARCANE 1948

*By Lester G. Davidson, Associate Chemist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.*

Fifteen field fertilizer experiments with sugarcane were conducted by the Soil Fertility Section of the Houma Station during 1948. Ten of these tests were with stubble cane, and 5 with plant cane. Three of the plant cane tests (Tables 1, 2, 3.) and three of the stubble cane tests (Tables 4, 5, 6.) failed to show a significant response to any of the fertilizer treatments used.

Both of the plant cane tests (Tables 7, 8.) responding to fertilizer showed significant yield increases from the use of 35 or 36 pounds of nitrogen per acre. In one of these tests, on Yazoo soil, the use of greater amounts of nitrogen, or mixtures supplying more nitrogen, did not result in additional significant yield increases. The other test, on Sharkey soil, did not show additional response to greater amounts of nitrogen.

Four of the stubble cane tests (Tables 9, 10, 11, 12.) that showed significant response to fertilizer treatments were on Yazoo soil. Two of these tests showed significant yield increases from the use of 24 pounds of nitrogen per acre; one from the use of 60 pounds, and the other from the use of 65 pounds of nitrogen per acre. In all 4 tests, the use of heavier applications of nitrogen, or of mixtures supplying more nitrogen, did not result in additional significant yield increases.

One stubble cane test (Table 13) that responded to fertilizer was on Sharkey soil. Yield increases were obtained from all of the treatments used, but no treatment produced significantly higher yields of cane and sugar per acre than the 24-0-0[1] treatment.

The 2 stubble cane tests on Franklin soil (Tables 14, 15) responded to the use of 60 and 65 pounds of nitrogen, and to mixtures supplying 60 and 65 pounds of nitrogen per acre. Yields from nitrogen alone, and from nitrogen plus phosphate or potash or both, did not differ significantly.

A test with C. P. 34-120 second stubble cane on Iberia soil on Albania Plantation was fertilized in the spring of 1948, but only one replication of each treatment was harvested. In the remainder of the test, the stands were extremely gappy and the cane was so short that it was felt that harvest data from the test would be quite erratic and might be misleading.

Yield increases from these fertilizer tests on the Yazoo and Sharkey soils are somewhat lower than the average increases obtained during the past several years. These average results for plant cane indicate that on Yazoo soil a profitable response is usually obtained from the use of up to 36 pounds of nitrogen per acre in the southern part of the cane area; usually little response is obtained in the northern half. Usually a profitable response is obtained with plant cane from the use of 36 pounds of nitrogen per acre on Franklin soil and 60 pounds of nitrogen per acre on Sharkey soil.

Average results indicate that stubble cane requires about 60 pounds of nitrogen per acre on all three of these soil types, with indications that over 60 pounds of nitrogen per acre may be profitable on the Franklin soil. Yields of cane and sugar per acre were not significantly affected by the use of phosphate or potash or both, with the nitrogen, on these three soil types.

The average results from a limited number of tests on Iberia and Lintonia soils indicate profitable response from the use of 36 and 60 pounds of nitrogen per acre on plant and stubble cane, respectively. Response to phosphate or potash or both has been obtained in some tests, but usually the major portion of the yield increases has been obtained from the nitrogen.

The effects of sulfate of ammonia and ammonium nitrate were compared in 3 tests on Yazoo soil and one test on Sharkey soil. No significant yield differences from these 2 nitrogen sources were obtained at the 36 pounds of nitrogen per acre level, but in the one test where the 2 sources were compared at the 60 and 96 pounds levels of nitrogen (Table 10), yields from the sulfate of ammonia treatments were higher. This is not in agreement with average results from a large number of experiments, which showed no significant yield differences from the use of 60 pounds of nitrogen per acre in the forms of nitrate of soda, sulfate of ammonia, cyanamid, and Uramon.

The effects of aqua ammonia, sulfate of ammonia, nitrate of soda, and ammonium nitrate, compared in two tests on Yazoo soil, are shown in tables 8 and 9. Each of these nitrogen fertilizers was applied at 35, 65, and 94 pounds of nitrogen per acre, and was used in a 65-65-65 treatment. These 2 tests were conducted cooperatively by the Soil Fertility Section, Division of Sugar Plant Investigations, and the Sugarcane Machinery Project of the Division of Farm Machinery. The Sugarcane Machinery Project supplied the aqua ammonia needed, and applied it in the test with their carefully calibrated equipment. In one of these tests, (Table 8) with C. P. 36/13 plant cane, the yields of cane and sugar per acre were significantly increased by every fertilizer treatment used. The yields of cane and sugar per acre from the 4 nitrogen sources, averaged without regard to fertilizer treatment, did not differ significantly. The yields of cane and sugar per acre from the 4 fertilizer treatments, averaged without regard to source of nitrogen, were almost identical. In the other test (Table 3),with C. P. 36/13 first stubble cane, the yields of sugar per acre from the sulfate of ammonia and nitrate of soda treatments, averaged without regard to fertilizer treatment, were significantly higher than the yield from aqua ammonia. The percent sucrose in the juice was approximately equal for these 4 sources of nitrogen. Yields of cane and sugar per acre, averaged without regard to source of nitrogen, were significantly increased by the use of 35 pounds of nitrogen per acre. A further significant increase was obtained from the use of the 65-0-0, 65-65-65, and 94-0-0 treatments, but there were no significant yield differences between these three treatments.

In another source of nitrogen test (Table 15), aqua ammonia, anhydrous ammonia, sulfate of ammonia, ammonium nitrate, and nitrate of soda were compared, using each nitrogen source in the following treatments: 65-0-0, 65-65-0, 65-0-65, 65-65-65. Every treatment resulted in significant increases in yields of cane and sugar per acre, and in a significant reduction in sucrose in the juice. The highest yields of cane per acre were obtained by the use of anhydrous ammonia, aqua ammonia, and nitrate of soda. The lowest yield was obtained by the use of sulfate of ammonia. The higher yields of cane were associated with lower percentages of sucrose, so that there were no significant differences in yields of sugar per acre from these 5 nitrogen sources. Yields of cane and sugar per acre for the 4 fertilizer treatments used, averaged without regard for source of nitrogen, were almost equal.

**Table 1**
**WEBRE PLANTATION**
**Thibodaux, La.**
**Yazoo soil** **1948** **C. P. 34/120 Plant Cane**

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.04 | 14.16 | 83.10 | 25.28 | 194.20 | 4909 |
| 24 | 0 | 0[1] | 17.17 | 14.33 | 83.46 | 24.25 | 196.98 | 4777 |
| 24 | 0 | 0[2] | 17.12 | 14.34 | 83.76 | 26.20 | 197.50 | 5174 |
| 36 | 0 | 0[1] | 16.90 | 14.00 | 82.84 | 23.66 | 191.68 | 4535 |
| 36 | 0 | 0[2] | 17.14 | 14.26 | 83.20 | 26.48 | 195.69 | 5182 |
| 36 | 0 | 0[3] | 16.87 | 13.90 | 82.39 | 26.04 | 189.76 | 4941 |
| 60 | 0 | 0[1] | 16.99 | 14.08 | 82.87 | 26.05 | 192.82 | 5023 |
| 60 | 0 | 0[2] | 17.02 | 14.03 | 82.43 | 26.12 | 191.58 | 5004 |
| 60 | 0 | 0[3] | 17.12 | 14.17 | 82.77 | 26.13 | 193.92 | 5067 |

The yields of cane and sugar per acre were not significantly affected by any of the above fertilizer treatments.

[1] nitrate of soda.
[2] sulfate of ammonia.
[3] ammonium nitrate.

Data are averages of six plots, each 5 rows wide by 24 feet long. Fertilizer applied April 30, 1948; cane harvested December 6-7, 1948. The cane was not burned before being weighed; a 15% deduction in weight was made to allow for trash.

**Table 2**
**WEBRE PLANTATION**
**Thibodaux, La.**
**Yazoo soil** **1948** **C. P. 34/120 Plant Cane**

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.28 | 14.54 | 84.14 | 21.99 | 200.74 | 4414 |
| 24 | 0 | 0 | 17.29 | 14.62 | 84.56 | 22.20 | 202.36 | 4492 |
| 36 | 0 | 0 | 17.40 | 14.73 | 84.66 | 20.51 | 204.01 | 4184 |
| 36 | 18 | 0 | 17.27 | 14.48 | 83.84 | 22.42 | 199.53 | 4473 |
| 36 | 36 | 0 | 17.58 | 14.90 | 84.76 | 22.75 | 206.49 | 4698 |
| 36 | 72 | 0 | 17.32 | 14.58 | 84.18 | 20.24 | 201.34 | 4075 |
| 36 | 0 | 18 | 17.20 | 14.52 | 84.42 | 22.91 | 200.80 | 4600 |
| 36 | 0 | 36 | 17.28 | 14.60 | 84.49 | 21.99 | 202.00 | 4442 |
| 36 | 0 | 72 | 17.06 | 14.20 | 83.24 | 23.25 | 194.92 | 4532 |
| 36 | 36 | 36 | 17.18 | 14.47 | 84.23 | 22.04 | 199.87 | 4405 |
| 60 | 0 | 0 | 17.42 | 14.66 | 84.16 | 22.10 | 202.41 | 4473 |
| 60 | 60 | 0 | 17.40 | 14.71 | 84.54 | 23.26 | 203.59 | 4736 |
| 60 | 0 | 60 | 16.79 | 14.11 | 84.04 | 21.14 | 194.67 | 4115 |
| 60 | 60 | 60 | 16.80 | 14.13 | 84.11 | 23.55 | 195.03 | 4593 |
| 96 | 0 | 0 | 17.28 | 14.52 | 84.03 | 22.82 | 200.32 | 4571 |

The yields of cane and sugar per acre were not significantly affected by any of the above fertilizer treatments.

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied April 30, 1948; cane harvested December 6-7, 1948. Fertilizer materials used were ammonium nitrate, superphosphate, and muriate of potash. The cane was not burned before being weighed; a 15% deduction in weight was made to allow for trash.

**Table 3**
**ST. ROSE PLANTATION**
**Labadieville, La.**
**Yazoo soil** **1948** **C. P. 36/105 Plant Cane**

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.04 | 14.24 | 83.57 | 27.04 | 195.88 | 5297 |
| 36 | 0 | 0 | 16.83 | 13.79 | 81.94 | 31.38 | 187.68 | 5889 |
| 36 | 18 | 0 | 16.97 | 14.00 | 82.50 | 29.69 | 191.25 | 5678 |
| 36 | 36 | 0 | 17.10 | 14.00 | 81.87 | 31.61 | 190.46 | 6020 |
| 36 | 0 | 18 | 17.06 | 14.13 | 82.83 | 32.59 | 193.44 | 6304 |
| 36 | 0 | 36 | 16.85 | 13.78 | 81.78 | 30.92 | 187.35 | 5793 |
| 36 | 36 | 36 | 17.13 | 14.07 | 82.14 | 32.64 | 191.75 | 6259 |
| 60 | 0 | 0 | 16.98 | 14.01 | 82.51 | 30.22 | 191.40 | 5784 |
| 60 | 15 | 0 | 17.10 | 14.04 | 82.11 | 33.88 | 191.30 | 6481 |
| 60 | 30 | 0 | 16.75 | 13.50 | 80.60 | 31.72 | 182.06 | 5775 |
| 60 | 45 | 0 | 16.76 | 13.71 | 81.80 | 34.64 | 186.43 | 6458 |
| 60 | 60 | 0 | 17.05 | 13.96 | 81.88 | 32.31 | 189.92 | 6136 |
| 60 | 0 | 15 | 16.94 | 14.05 | 82.94 | 32.29 | 192.49 | 6216 |
| 60 | 0 | 30 | 16.87 | 13.69 | 81.15 | 34.70 | 185.33 | 6431 |
| 60 | 0 | 45 | 16.60 | 13.61 | 81.99 | 32.25 | 185.30 | 5976 |
| 60 | 0 | 60 | 16.56 | 13.43 | 81.10 | 34.26 | 181.75 | 6227 |
| 60 | 15 | 15 | 16.99 | 13.87 | 81.64 | 31.97 | 188.39 | 6023 |
| 60 | 30 | 30 | 16.84 | 13.67 | 81.18 | 34.09 | 185.09 | 6310 |

Table 3—Continued
ST. ROSE PLANTATION
Labadieville, La.

Yazoo soil — 1948 — C. P. 36/105 Plant Cane

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 60 | 45 | 45 | 17.10 | 14.06 | 82.22 | 32.56 | 191.72 | 6242 |
| 60 | 60 | 60 | 16.68 | 13.44 | 80.58 | 31.90 | 181.23 | 5781 |
| 96 | 0 | 0 | 16.23 | 13.05 | 80.41 | 32.47 | 175.76 | 5707 |
| 96 | 96 | 96 | 16.99 | 13.54 | 81.13 | 35.35 | 183.27 | 6479 |

The yields of cane and sugar per acre and the percent sucrose were not significantly affected by any of the above fertilizer treatments.

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied April 13, 1948; cane harvested November 29-30, 1948. Fertilizer materials used were ammonium nitrate, superphosphate, and muriate of potash. The cane was not burned before being weighed; a 17% deduction in weight was made to allow for trash.

Table 4
MANDALAY PLANTATION
Houma, La.

Sharkey soil — 1948 — C. P. 36/13 First Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.67 | 15.55 | 88.00 | 24.28 | 233.09 | 5659 |
| 24 | 0 | 0 | 17.17 | 14.76 | 85.96 | 32.25 | 218.66 | 7052 |
| 24 | 24 | 24 | 17.14 | 14.67 | 85.59 | 31.01 | 216.85 | 6725 |
| 36 | 0 | 0[1] | 17.21 | 14.82 | 86.11 | 30.30 | 219.75 | 6658 |
| 36 | 0 | 0[2] | 16.94 | 14.46 | 85.36 | 31.57 | 213.45 | 6739 |
| 36 | 0 | 0 | 17.41 | 14.96 | 85.93 | 31.35 | 221.58 | 6947 |
| 36 | 36 | 36 | 17.34 | 14.82 | 85.47 | 28.13 | 218.90 | 6158 |
| 48 | 0 | 0 | 17.20 | 14.63 | 85.06 | 28.96 | 215.56 | 6243 |
| 48 | 48 | 48 | 17.09 | 14.50 | 84.84 | 31.13 | 213.37 | 6642 |
| 60 | 0 | 0 | 16.99 | 14.52 | 85.46 | 30.95 | 214.47 | 6638 |
| 60 | 60 | 60 | 16.76 | 14.19 | 84.67 | 30.99 | 208.58 | 6464 |
| 96 | 0 | 0[2] | 16.59 | 14.00 | 84.39 | 31.63 | 205.43 | 6498 |
| 96 | 0 | 0 | 16.60 | 14.03 | 84.52 | 33.65 | 206.04 | 6933 |
| 96 | 96 | 96 | 16.70 | 14.15 | 84.73 | 36.72 | 208.07 | 7640 |

The yields of cane and sugar per acre and the present sucrose were not significantly affected by any of the above fertilizer treatments.

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied April 22, 1948; cane harvested December 1-2, 1948. Fertilizer materials used were nitrate of soda, superphosphate, and muriate of potash, unless otherwise indicated. The cane was not burned before being weighed; a 12% deduction in weight was made to allow for trash. [1] ammonium nitrate. [2] sulfate of ammonia.

Table 5
BARROWZA PLANTATION
Lobdell, La.

Yazoo soil — 1948 — C. P. 34/120 First Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.64 | 14.73 | 83.50 | 12.72 | 202.54 | 2576 |
| 24 | 0 | 0 | 17.96 | 15.11 | 84.13 | 16.59 | 208.59 | 3461 |
| 24 | 24 | 0 | 18.08 | 15.26 | 84.40 | 14.08 | 211.02 | 2971 |
| 24 | 0 | 24 | 18.12 | 15.38 | 84.88 | 11.95 | 213.30 | 2549 |
| 24 | 24 | 24 | 17.94 | 14.87 | 82.89 | 13.60 | 203.66 | 2770 |
| 36 | 0 | 0[1] | 17.61 | 14.48 | 82.23 | 22.13 | 197.46 | 4370 |
| 36 | 0 | 0[2] | 18.29 | 15.35 | 83.93 | 14.76 | 211.63 | 3124 |
| 36 | 0 | 0 | 18.02 | 15.18 | 84.24 | 18.60 | 209.70 | 3900 |
| 36 | 36 | 0 | 17.49 | 14.47 | 82.73 | 16.79 | 197.98 | 3324 |
| 36 | 0 | 36 | 17.86 | 15.02 | 84.10 | 20.15 | 207.31 | 4177 |
| 36 | 36 | 36 | 17.84 | 15.12 | 84.75 | 19.59 | 209.53 | 4105 |
| 60 | 0 | 0 | 17.75 | 14.69 | 82.76 | 19.01 | 201.02 | 3821 |
| 60 | 60 | 0 | 17.98 | 15.06 | 83.76 | 20.49 | 207.41 | 4250 |
| 60 | 0 | 60 | 17.84 | 15.09 | 84.59 | 20.84 | 208.90 | 4353 |
| 60 | 60 | 60 | 17.63 | 14.78 | 83.83 | 20.18 | 203.65 | 4110 |
| 96 | 0 | 0 | 17.14 | 14.01 | 81.74 | 23.44 | 190.42 | 4463 |

The yields of cane and sugar per acre were not significantly affected by any of the above fertilizer treatments. [1] nitrate of soda. [2] sulfate of ammonia.

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied April 15, 1948; cane harvested October 27, 1948. Fertilizer materials used were ammonium nitrate, superphosphate, and muriate of potash, unless otherwise indicated. The cane was not burned before being weighed; a 9% deduction in weight was made to allow for trash.

Table 6
ADDITIONS PLANTATION
Cinclare, La.

Sharkey soil — 1948 — C. P. 34/120 First Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 16.28 | 12.55 | 77.09 | 12.61 | 164.92 | 2080 |
| 16 | 0 | 0[1] | 16.67 | 13.16 | 78.94 | 14.93 | 175.39 | 2619 |
| 16 | 0 | 0 | 16.17 | 12.49 | 77.24 | 14.08 | 164.33 | 2314 |
| 24 | 0 | 0[1] | 15.86 | 12.18 | 76.80 | 17.44 | 159.69 | 2785 |
| 24 | 0 | 0 | 16.38 | 12.81 | 78.21 | 14.07 | 169.78 | 2389 |
| 24 | 24 | 0 | 16.34 | 12.72 | 77.85 | 12.10 | 168.13 | 2034 |
| 24 | 0 | 24 | 15.84 | 12.16 | 76.77 | 14.55 | 159.39 | 2319 |
| 24 | 24 | 24 | 15.84 | 12.22 | 77.15 | 15.61 | 160.65 | 2508 |

**Table 6—Continued**
**ADDITIONS PLANTATION—Cinclare, La.**
**Sharkey soil** **1948** **C. P. 34/120 First Stubble**

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 36 | 0 | 0[1] | 16.36 | 12.74 | 77.87 | 14.73 | 168.43 | 2481 |
| 36 | 0 | 0 | 16.23 | 12.60 | 77.63 | 15.81 | 166.28 | 2629 |
| 36 | 36 | 0 | 16.21 | 12.39 | 76.43 | 13.14 | 161.97 | 2128 |
| 36 | 0 | 36 | 15.68 | 11.98 | 76.40 | 16.18 | 156.58 | 2533 |
| 36 | 36 | 36 | 16.42 | 12.94 | 78.81 | 13.33 | 172.28 | 2296 |
| 48 | 0 | 0[1] | 16.17 | 12.33 | 76.25 | 12.37 | 160.95 | 1991 |
| 48 | 0 | 0 | 16.01 | 12.21 | 76.26 | 13.49 | 159.40 | 2150 |
| 60 | 0 | 0[1] | 15.79 | 11.96 | 75.74 | 13.81 | 155.48 | 2147 |
| 60 | 0 | 0 | 16.12 | 12.56 | 77.92 | 14.97 | 166.11 | 2487 |
| 60 | 60 | 0 | 16.33 | 12.54 | 76.79 | 12.75 | 164.40 | 2096 |
| 60 | 0 | 60 | 15.90 | 12.34 | 77.61 | 12.04 | 162.82 | 1960 |
| 60 | 60 | 60 | 16.40 | 12.85 | 78.35 | 16.41 | 170.51 | 2798 |
| 96 | 0 | 0[1] | 16.39 | 12.80 | 78.10 | 12.67 | 169.51 | 2148 |
| 96 | 0 | 0 | 16.52 | 12.90 | 78.09 | 11.24 | 170.83 | 1920 |
| 96 | 96 | 96 | 16.12 | 12.42 | 77.05 | 15.43 | 163.16 | 2518 |
| 0 | 0 | 0[2] | 15.97 | 12.20 | 76.39 | 13.02 | 159.44 | 2076 |
| 36 | 0 | 0[2] | 16.03 | 12.36 | 77.11 | 14.02 | 162.44 | 2277 |

The yields of cane and sugar per acre were not significantly affected by any of the above fertilizer treatments. [1] ammonium nitrate. [2] plus one ton lime per acre.

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied April 19, 1948; cane harvested October 26, 1948. Fertilizer materials used were nitrate of soda, superphosphate, and muriate of potash, unless otherwise indicated. The cane was not burned before being weighed; a 7% deducti on in weight was made to allow for trash.

**Table 7**
**MARY PLANTATION—Raceland, La.**
**Sharkey soil** **1948** **Co. 290 Plant Cane**

| Fertilizer Treatments | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|
| Fall Treatment | Spring Treatment | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| Pounds nitrogen per acre | Pounds nitrogen per acre | % | % | % | tons | pounds | pounds |
| 0 | 0 | 15.34 | 12.09 | 78.81 | 29.66 | 174.11 | 5164 |
| 0 | 36 | 15.64 | 12.23 | 78.20 | 34.70 | 175.32 | 6084 |
| 0 | 60 | 15.43 | 12.05 | 78.09 | 32.88 | 172.61 | 5675 |
| 0 | 96 | 15.59 | 12.24 | 78.51 | 34.48 | 175.88 | 6064 |
| 16 | 0 | 15.70 | 12.44 | 79.24 | 31.40 | 179.71 | 5643 |
| 16 | 36 | 15.68 | 12.20 | 77.81 | 33.50 | 174.37 | 5841 |
| 16 | 60 | 15.90 | 12.49 | 78.55 | 33.55 | 179.53 | 6023 |
| 16 | 96 | 15.46 | 11.96 | 77.36 | 34.50 | 170.36 | 5877 |

**Table 7—Continued**
**MARY PLANTATION**
**Raceland, La.**
**Sharkey soil** **1948** **Co. 290 Plant Cane**

| Fertilizer Treatments | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|
| Fall Treatment | Spring Treatment | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| Pounds nitrogen per acre | Pounds nitrogen per acre | % | % | % | tons | pounds | pounds |
| 32 | 0 | 15.82 | 12.53 | 79.20 | 29.60 | 180.97 | 5357 |
| 32 | 36 | 15.62 | 12.22 | 78.23 | 31.16 | 175.22 | 5460 |
| 32 | 60 | 15.92 | 12.55 | 78.83 | 33.15 | 180.76 | 5992 |
| 32 | 96 | 15.38 | 12.00 | 78.02 | 32.91 | 171.80 | 5654 |
| 48 | 0 | 14.99 | 11.44 | 76.32 | 29.75 | 161.61 | 4808 |
| 48 | 36 | 15.80 | 12.38 | 78.35 | 31.67 | 177.68 | 5627 |
| 48 | 60 | 15.49 | 12.20 | 78.76 | 32.22 | 175.63 | 5659 |
| 48 | 96 | 15.42 | 12.03 | 78.02 | 32.41 | 172.22 | 5582 |
| 64 | 0 | 16.36 | 13.07 | 79.89 | 28.13 | 189.70 | 5336 |
| 64 | 36 | 16.14 | 12.82 | 79.43 | 32.40 | 185.46 | 6009 |
| 64 | 60 | 15.59 | 12.18 | 78.13 | 32.44 | 174.51 | 5661 |
| 64 | 96 | 15.76 | 12.34 | 78.30 | 33.43 | 177.03 | 5918 |
| ([1]) | 0 | 15.50 | 12.10 | 78.06 | 30.64 | 173.28 | 5309 |
| ([1]) | 36 | 15.96 | 12.67 | 79.39 | 35.18 | 183.23 | 6446 |
| ([1]) | 60 | 16.16 | 12.99 | 80.38 | 34.30 | 189.20 | 6490 |
| ([1]) | 96 | 15.54 | 12.20 | 78.51 | 29.77 | 175.30 | 5219 |
| Difference for significance (P = .05) | | | | | 3.32 | | 665 |
| Difference for significance (P = .01) | | | | | 4.41 | | 883 |

[1] Ten tons wet (as is) compost per acre. The compost contained 0.24% total N.

Data are averages of four plots, each 5 rows wide by 20 feet long Cane planted October 1, 1947. Fertilizer applied October 1, 1947, and April 23, 1948. Compost applied August 14, 1947. Cane harvested December 28-29, 1948. Fertilizer materials used were nitrate of soda in the fall, and ammonium nitrate in the spring. The cane was not burned before being weighed; an 11% deduction in weight was made to allow for trash.

**Table 8**
**HOLLYWOOD PLANTATION**
**Houma, La.**
**Yazoo soil** **1948** **P. C. 36/13 Plant Cane**

| Fertilizer Treatments Pounds per acre | | | Source of Nitrogen | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | | 18.39 | 16.25 | 88.36 | 25.30 | 244.07 | 6175 |
| 35 | 0 | 0 | Sulfate | 17.92 | 15.64 | 87.28 | 32.00 | 233.48 | 7471 |
| 65 | 0 | 0 | of | 17.86 | 15.58 | 87.23 | 34.76 | 232.52 | 8082 |
| 65 | 65 | 65 | | 17.85 | 15.66 | 87.73 | 35.61 | 234.38 | 8346 |
| 94 | 0 | 0 | Ammonia | 17.77 | 15.53 | 87.39 | 31.75 | 231.99 | 7366 |

**Table 8—Continued**
**HOLLYWOOD PLANTATION**
**Houma, La.**

Yazoo soil — 1948 — C. P. 36/13 Plant Cane

| Fertilizer Treatments Pounds per acre | | | Source of Nitrogen | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | | % | % | % | tons | pounds | pounds |
| 35 | 0 | 0 | Nitrate | 17.75 | 15.52 | 87.44 | 33.09 | 231.90 | 7674 |
| 65 | 0 | 0 | of | 17.76 | 15.59 | 87.78 | 33.65 | 233.40 | 7854 |
| 65 | 65 | 65 | Soda | 17.94 | 15.78 | 87.96 | 33.69 | 236.48 | 7967 |
| 94 | 0 | 0 | | 17.59 | 15.51 | 88.18 | 36.03 | 232.71 | 8365 |
| 35 | 0 | 0 | Ammonium | 18.30 | 16.04 | 87.65 | 32.43 | 239.96 | 7782 |
| 65 | 0 | 0 | | 17.85 | 15.63 | 87.56 | 33.54 | 233.71 | 7839 |
| 65 | 65 | 65 | | 17.85 | 15.56 | 87.17 | 33.00 | 232.14 | 7661 |
| 94 | 0 | 0 | Nitrate | 17.77 | 15.70 | 88.35 | 34.51 | 235.79 | 8137 |
| 35 | 0 | 0 | Aqua | 18.03 | 15.91 | 88.24 | 33.15 | 238.80 | 7916 |
| 65 | 0 | 0 | | 17.67 | 15.37 | 86.98 | 32.75 | 229.06 | 7502 |
| 65 | 65 | 65 | | 17.50 | 15.26 | 87.20 | 31.65 | 227.70 | 7207 |
| 94 | 0 | 0 | Ammonia | 17.66 | 15.47 | 87.60 | 33.56 | 231.36 | 7764 |
| Difference for signiticance (P = .05) | | | | | | | 3.40 | | 913 |
| Difference for significance (P = .01) | | | | | | | 4.53 | | 1218 |

Data are averages of four plots, each 5 rows wide by 24 feet long. Fertilizer applied April 21, 1948; cane harvested December 9, 1948. Sources of nitrogen are listed above; other fertilizer materials used were superphosphate and muriate of potash. The cane was not burned before being weighed; a 14% deduction in weight was made to allow for trash.

This experiment was conducted cooperatively by the Soil Fertility Section, Division of Sugar Plant Investigations, and the Sugarcane Machinery Project, Division of Farm Machinery.

**Table 9**
**MANDALAY PLANTATION**
**Houma, La.**

Yazoo soil — 1948 — C. P. 36/13 First Stubble

| Fertilizer Treatments Pounds per acre | | | Source of Nitrogen | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | | 18.64 | 17.08 | 91.63 | 18.50 | 261.01 | 4829 |
| 35 | 0 | 0 | Sulfate | 18.77 | 16.94 | 90.25 | 25.69 | 257.02 | 6603 |
| 65 | 0 | 0 | of | 18.18 | 16.30 | 89.66 | 29.28 | 246.55 | 7219 |
| 65 | 65 | 65 | Ammonia | 18.34 | 16.62 | 90.62 | 28.93 | 252.67 | 7310 |
| 94 | 0 | 0 | | 18.02 | 16.14 | 89.57 | 30.58 | 244.01 | 7462 |
| 35 | 0 | 0 | Nitrate | 18.52 | 16.75 | 90.44 | 23.22 | 254.41 | 5907 |
| 65 | 0 | 0 | of | 18.06 | 16.41 | 90.86 | 29.76 | 249.79 | 7434 |
| 65 | 65 | 65 | Soda | 18.27 | 16.66 | 91.19 | 30.27 | 254.02 | 7689 |
| 94 | 0 | 0 | | 18.34 | 16.39 | 89.37 | 28.20 | 247.52 | 6980 |

**Table 9—Continued**
**MANDALAY PLANTATION**
**Houma, La.**

Yazoo soil — 1948 — C. P. 36/13 First Stubble

| Fertilizer Treatments Pounds per acre | | | Source of Nitrogen | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | | % | % | % | tons | pounds | pounds |
| 35 | 0 | 0 | Ammonium | 18.51 | 16.62 | 89.79 | 25.02 | 251.56 | 6294 |
| 65 | 0 | 0 | | 18.27 | 16.66 | 91.19 | 24.97 | 254.02 | 6343 |
| 65 | 65 | 65 | | 18.84 | 17.36 | 92.14 | 25.69 | 265.97 | 6833 |
| 94 | 0 | 0 | Nitrate | 18.12 | 16.32 | 90.07 | 26.96 | 247.39 | 6670 |
| 35 | 0 | 0 | Aqua | 18.76 | 16.93 | 90.25 | 18.53 | 256.87 | 4760 |
| 65 | 0 | 0 | | 18.42 | 16.64 | 90.34 | 23.97 | 252.59 | 6055 |
| 65 | 65 | 65 | | 18.46 | 16.66 | 90.25 | 28.04 | 252.78 | 7088 |
| 94 | 0 | 0 | Ammonia | 17.84 | 15.85 | 88.85 | 29.98 | 238.69 | 7156 |
| Difference for significance (P = .05) | | | | | | | 4.27 | | 11.30 |
| Difference for significance (P = .01) | | | | | | | 5.71 | | 15.10 |

Data are averages of 4 plots, each 5 rows wide by 24 feet long. Fertilizer applied April 22, 1948; cane harvested December 1-2, 1948. Sources of nitrogen are listed above; other fertilizer materials used were superphosphate and muriate of potash. The cane was not burned before being weighed; a 10% deduction in weight was made to allow for trash.

This experiment was conducted cooperatively by the Soil Fertility Section, Division of Sugar Plant Investigations, and the Sugarcane Machinery Project, Division Farm Machinery.

**Table 10**
**FOREST GROVE PLANTATION**
**Thibodaux, La.**

Yazoo soil — 1948 — C. P. 33/243 Second Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.81 | 15.33 | 86.08 | 12.78 | 214.14 | 2737 |
| 24 | 0 | 0[1] | 17.81 | 15.43 | 86.64 | 17.89 | 216.25 | 3869 |
| 36 | 0 | 0[1] | 17.59 | 15.12 | 85.96 | 20.39 | 211.06 | 4304 |
| 60 | 0 | 0[1] | 17.44 | 14.85 | 85.15 | 21.29 | 206.29 | 4392 |
| 96 | 0 | 0[1] | 17.44 | 14.87 | 85.26 | 21.63 | 206.71 | 4471 |
| 24 | 0 | 0 | 17.60 | 15.04 | 85.45 | 21.17 | 209.32 | 4431 |
| 24 | 24 | 0 | 17.91 | 15.58 | 86.99 | 20.52 | 218.80 | 4490 |
| 24 | 0 | 24 | 17.78 | 15.41 | 86.67 | 19.86 | 216.01 | 4290 |
| 24 | 24 | 24 | 17.46 | 14.98 | 85.80 | 22.78 | 208.91 | 4759 |
| 36 | 0 | 0 | 17.91 | 15.43 | 86.15 | 22.09 | 215.64 | 4763 |
| 36 | 36 | 0 | 17.66 | 15.05 | 85.22 | 26.09 | 209.16 | 5457 |
| 36 | 0 | 36 | 17.40 | 14.89 | 85.57 | 25.37 | 207.38 | 5261 |
| 36 | 36 | 36 | 17.71 | 15.24 | 86.05 | 22.67 | 212.86 | 4826 |

Table 10—Continued
FOREST GROVE PLANTATION—Thibodaux, La.
Yazoo soil 1948 C. P. 33/243 Second Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Per ton of cane | Per acre |
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | | |
| | | | % | % | % | tons | pounds | pounds |
| 60 | 0 | 0 | 17.78 | 15.18 | 85.38 | 27.58 | 211.17 | 5824 |
| 60 | 60 | 0 | 17.56 | 14.99 | 85.36 | 25.59 | 208.51 | 5336 |
| 60 | 0 | 60 | 17.05 | 14.52 | 85.16 | 26.42 | 201.72 | 5329 |
| 60 | 60 | 60 | 17.24 | 14.65 | 84.98 | 25.50 | 203.30 | 5184 |
| 96 | 0 | 0 | 17.56 | 14.82 | 84.40 | 30.00 | 204.93 | 6148 |
| 96 | 96 | 0 | 17.42 | 14.73 | 84.56 | 26.63 | 203.88 | 5429 |
| 96 | 0 | 96 | 16.87 | 14.30 | 84.77 | 30.99 | 198.19 | 6142 |
| 96 | 96 | 96 | 17.10 | 14.41 | 84.27 | 30.05 | 199.10 | 5983 |
| Difference for significance (P = .05) | | | | | | 4.08 | | 776 |
| Difference for significance (P = .01) | | | | | | 5.44 | | 1033 |

Data are averages of four plots, each 5 rows wide by 24 feet long. Fertilizer applied April 29, 1948; cane harvested December 14, 1948. Fertilizer materials used were sulfate of ammonia, superphosphate, and muriate of potash, unless otherwise indicated. The cane was not burned before being weighed; an 11% deduction in weight was made to allow for trash. [1] ammonium nitrate.

Table 11
RIENZI PLANTATION—Thibodaux, La.
Yazoo soil 1948 Co. 290 First Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Per ton of cane | Per acre |
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | | |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 15.22 | 11.94 | 78.45 | 16.58 | 171.49 | 2843 |
| 24 | 0 | 0 | 15.43 | 11.77 | 76.28 | 23.52 | 166.22 | 3909 |
| 36 | 0 | 0 | 15.30 | 11.56 | 75.56 | 24.84 | 162.30 | 4032 |
| 36 | 18 | 0 | 15.38 | 11.58 | 75.29 | 23.14 | 162.22 | 3754 |
| 36 | 36 | 0 | 14.96 | 11.24 | 75.13 | 22.82 | 157.25 | 3588 |
| 36 | 72 | 0 | 15.34 | 11.60 | 75.62 | 23.72 | 162.94 | 3865 |
| 36 | 0 | 18 | 14.93 | 11.20 | 75.02 | 23.53 | 156.54 | 3683 |
| 36 | 0 | 36 | 14.68 | 11.04 | 75.20 | 24.76 | 154.54 | 3826 |
| 36 | 0 | 72 | 14.94 | 11.65 | 77.98 | 22.75 | 166.73 | 3793 |
| 36 | 36 | 36 | 14.90 | 11.38 | 76.38 | 24.44 | 160.84 | 3931 |
| 60 | 0 | 0 | 15.22 | 11.40 | 74.90 | 24.31 | 159.18 | 3870 |
| 60 | 60 | 60 | 15.28 | 11.72 | 76.70 | 24.40 | 166.08 | 4052 |
| 96 | 0 | 0 | 15.30 | 11.49 | 75.10 | 24.84 | 160.70 | 3992 |
| Difference for significance (P = .05) | | | | | | 3.59 | | 577 |

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied April 29, 1948; cane harvested November 11-12, 1948. Fertilizer materials used were ammonium nitrate, superphosphate, and muriate of potash. The cane was not burned before being weighed; a 13% deduction in weight was made to allow for trash.

Table 12
RIENZI PLANTATION
Thibodaux, La.
Yazoo soil 1948 C. P. 34/120 First Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Per ton of cane | Per acre |
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | | |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.79 | 15.39 | 86.51 | 11.56 | 215.53 | 2492 |
| 24 | 0 | 0 | 17.68 | 15.08 | 85.30 | 24.79 | 209.67 | 5198 |
| 36 | 0 | 0 | 17.88 | 15.38 | 86.02 | 21.98 | 214.77 | 4721 |
| 36 | 18 | 0 | 17.70 | 15.02 | 84.86 | 25.14 | 208.28 | 5236 |
| 36 | 36 | 0 | 17.96 | 15.44 | 85.97 | 20.22 | 215.54 | 4358 |
| 36 | 72 | 0 | 17.83 | 15.07 | 84.52 | 25.86 | 208.54 | 5393 |
| 36 | 0 | 18 | 17.92 | 15.44 | 86.16 | 20.65 | 215.79 | 4456 |
| 36 | 0 | 36 | 17.74 | 15.24 | 85.91 | 22.26 | 212.67 | 4734 |
| 36 | 0 | 72 | 17.52 | 14.96 | 85.39 | 24.32 | 208.12 | 5061 |
| 36 | 36 | 36 | 17.48 | 14.64 | 83.75 | 23.32 | 201.62 | 4702 |
| 60 | 0 | 0 | 17.55 | 14.83 | 84.50 | 28.03 | 205.20 | 5752 |
| 60 | 60 | 60 | 17.60 | 14.94 | 84.89 | 27.59 | 207.21 | 5717 |
| 96 | 0 | 0 | 17.35 | 14.76 | 85.07 | 26.64 | 204.94 | 5460 |
| Difference for significance | | | | | | | | |
| (P = .05) | | | | 0.52 | | 6.79 | | 1419 |
| (P = .01) | | | | | | 9.10 | | 1904 |

Data are averages of four plots, each 5 rows wide by 20 feet long. Feritilizer applied April 29, 1948; cane harvested November 11-12, 1948. Fertilizer materials used were ammonium nitrate, superphosphate, and muriate of potash. The cane was not burned before being weighed; an 11% deduction in weight was made to allow for trash.

Table 13
ST. ROSE PLANTATION
Labadieville, La.
Sharkey soil 1948 C. P. 34/92 Second Stubble

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Per ton of cane | Per acre |
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | | |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.52 | 14.50 | 82.76 | 11.15 | 194.38 | 2167 |
| 24 | 0 | 0 | 17.61 | 14.25 | 80.92 | 16.26 | 188.68 | 3068 |
| 36 | 0 | 0 | 17.49 | 14.38 | 82.22 | 15.32 | 192.08 | 2943 |
| 36 | 18 | 0 | 17.86 | 14.61 | 81.80 | 19.18 | 194.62 | 3733 |
| 36 | 0 | 18 | 17.61 | 14.46 | 82.11 | 18.54 | 193.02 | 3579 |
| 36 | 18 | 18 | 17.46 | 14.35 | 82.19 | 16.91 | 191.64 | 3241 |
| 36 | 36 | 0 | 17.83 | 14.71 | 82.50 | 20.33 | 196.86 | 4002 |
| 36 | 0 | 36 | 17.88 | 14.74 | 82.44 | 15.20 | 197.18 | 2997 |
| 36 | 36 | 36 | 17.63 | 14.56 | 82.59 | 18.80 | 194.96 | 3665 |
| 48 | 0 | 0 | 17.81 | 14.72 | 82.65 | 19.81 | 197.19 | 3906 |

**Table 13—Continued**
**ST. ROSE PLANTATION—Labadieville, La.**

**Sharkey soil** **1948** **C. P. 34/92 Second Stubble**

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 60 | 0 | 0 | 17.48 | 14.07 | 80.49 | 18.50 | 185.75 | 3436 |
| 60 | 30 | 0 | 17.78 | 14.39 | 80.93 | 19.19 | 190.55 | 3657 |
| 60 | 0 | 30 | 17.51 | 14.41 | 82.30 | 20.89 | 192.58 | 4023 |
| 60 | 30 | 30 | 17.83 | 14.66 | 82.22 | 20.22 | 195.83 | 3960 |
| 60 | 60 | 0 | 17.67 | 14.38 | 81.38 | 20.21 | 191.01 | 3860 |
| 60 | 0 | 60 | 17.68 | 14.43 | 81.62 | 19.50 | 191.98 | 3744 |
| 60 | 60 | 60 | 17.62 | 14.43 | 81.90 | 18.23 | 192.34 | 3506 |
| 96 | 0 | 0 | 17.80 | 14.46 | 81.24 | 19.78 | 191.88 | 3795 |
| 96 | 96 | 96 | 17.63 | 14.26 | 80.88 | 18.51 | 188.77 | 3494 |
| Difference for significance (P = .05) | | | | | | 4.78 | | 922 |

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied April 13, 1948; cane harvested November 29-30, 1948. Fertilizer materials used were ammonium nitrate, superphosphate, and muriate of potash. The cane was not burned before being weighed; a 14% deduction in weight was made to allow for trash.

**Table 14**
**ARLINGTON PLANTATION—Franklin, La.**

**Franklin soil** **1948** **Co. 290 Second Stubble**

| Fertilizer Treatments Pounds per acre | | | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | 17.55 | 15.22 | 86.72 | 10.07 | 230.84 | 2325 |
| 0 | 0 | 24 | 17.00 | 14.68 | 86.35 | 10.75 | 222.17 | 2388 |
| 0 | 0 | 48 | 16.90 | 14.57 | 86.21 | 10.00 | 220.32 | 2203 |
| 0 | 24 | 0 | 17.18 | 14.94 | 86.96 | 10.33 | 226.90 | 2344 |
| 0 | 48 | 0 | 17.45 | 14.97 | 85.79 | 11.27 | 225.80 | 2545 |
| 0 | 24 | 24 | 17.65 | 15.15 | 85.84 | 12.18 | 228.58 | 2784 |
| 0 | 24 | 48 | 17.10 | 14.70 | 85.97 | 10.36 | 221.96 | 2300 |
| 0 | 48 | 24 | 17.24 | 14.78 | 85.73 | 12.02 | 222.86 | 2679 |
| 0 | 48 | 48 | 17.28 | 14.83 | 85.82 | 11.99 | 223.73 | 2683 |
| 36 | 0 | 0 | 17.65 | 15.17 | 85.95 | 15.71 | 229.04 | 3598 |
| 36 | 0 | 24 | 17.44 | 14.80 | 84.86 | 19.84 | 221.99 | 4404 |
| 36 | 0 | 48 | 17.30 | 14.79 | 85.49 | 16.14 | 222.69 | 3594 |
| 36 | 24 | 0 | 17.88 | 15.35 | 85.85 | 19.31 | 231.62 | 4473 |
| 36 | 48 | 0 | 17.68 | 15.18 | 85.86 | 17.83 | 229.06 | 4084 |
| 36 | 24 | 24 | 17.40 | 14.80 | 85.06 | 19.38 | 222.26 | 4307 |
| 36 | 24 | 48 | 17.67 | 15.17 | 85.85 | 15.19 | 228.90 | 3477 |
| 36 | 48 | 24 | 17.67 | 15.15 | 85.74 | 16.71 | 228.45 | 3817 |
| 36 | 48 | 48 | 17.74 | 15.24 | 85.91 | 17.83 | 230.04 | 4102 |
| 60 | 0 | 0 | 17.67 | 15.01 | 84.95 | 25.02 | 225.26 | 5636 |
| 60 | 0 | 24 | 17.60 | 14.93 | 84.83 | 21.67 | 223.90 | 4852 |
| 60 | 0 | 48 | 17.41 | 14.80 | 85.01 | 23.19 | 222.19 | 5153 |
| 60 | 24 | 0 | 17.61 | 14.94 | 84.84 | 20.13 | 224.06 | 4510 |
| 60 | 48 | 0 | 17.57 | 14.78 | 84.12 | 19.13 | 220.68 | 4222 |
| 60 | 24 | 24 | 17.19 | 14.70 | 85.51 | 19.34 | 221.36 | 4281 |
| 60 | 24 | 48 | 17.15 | 14.58 | 85.01 | 19.10 | 218.89 | 4181 |
| 60 | 48 | 24 | 17.77 | 15.21 | 85.59 | 21.64 | 229.15 | 4959 |
| 60 | 48 | 48 | 17.53 | 14.93 | 85.17 | 22.67 | 224.36 | 5086 |

**Table 14—Continued**

| | | |
|---|---|---|
| Difference for significance | | |
| (P = .05) | 4.47 | 980 |
| (P = .01) | 5.93 | 1300 |

Data are averages of four plots, each 5 rows wide by 20 feet long. Fertilizer applied March 31, 1948; cane harvested November 17, 1948. Fertilizer materials used were sulfate of ammonia, superphosphate, and muriate of potash. The cane was not burned before being weighed; a 15% deduction in weight was made to allow for trash

**Table 15**
**OAKLAWN PLANTATION**
**Franklin, La.**

**Franklin soil** **1948** **Co. 290 First Stubble**

| Fertilizer Treatments Pounds per acre | | | Source of Nitrogen | Houma Station Mill Analyses | | | Cane per acre | Indicated available 96° sugar at harvest | |
|---|---|---|---|---|---|---|---|---|---|
| N | $P_2O_5$ | $K_2O$ | | Brix | Sucrose | Purity | | Per ton of cane | Per acre |
| | | | | % | % | % | tons | pounds | pounds |
| 0 | 0 | 0 | | 17.08 | 14.31 | 83.78 | 16.33 | 213.20 | 3482 |
| 65 | 0 | 0 | Aqua | 15.83 | 12.37 | 78.14 | 29.39 | 177.25 | 5209 |
| 65 | 65 | 0 | | 16.10 | 12.70 | 78.88 | 30.17 | 182.99 | 5521 |
| 65 | 0 | 65 | | 15.81 | 12.34 | 78.05 | 27.51 | 176.70 | 4861 |
| 65 | 65 | 65 | Ammonia | 15.73 | 12.31 | 78.26 | 29.60 | 176.55 | 5226 |
| 65 | 0 | 0 | Anhydrous | 16.20 | 12.79 | 78.95 | 29.65 | 184.38 | 5467 |
| 65 | 65 | 0 | | 16.26 | 12.99 | 79.89 | 30.08 | 188.54 | 5671 |
| 65 | 0 | 65 | | 16.06 | 12.81 | 79.76 | 29.30 | 185.76 | 5443 |
| 65 | 65 | 65 | Ammonia | 15.96 | 12.73 | 79.76 | 29.49 | 184.60 | 5444 |
| 65 | 0 | 0 | Sulfate | 16.66 | 13.37 | 80.25 | 25.47 | 194.56 | 4955 |
| 65 | 65 | 0 | of | 16.62 | 13.45 | 80.93 | 26.31 | 196.64 | 5174 |
| 65 | 0 | 65 | | 16.50 | 13.36 | 80.97 | 25.54 | 195.39 | 4990 |
| 65 | 65 | 65 | Ammonia | 16.44 | 13.39 | 81.45 | 25.12 | 196.47 | 4935 |
| 65 | 0 | 0 | Ammonium | 16.49 | 13.30 | 80.65 | 28.23 | 194.09 | 5479 |
| 65 | 65 | 0 | | 16.62 | 13.37 | 80.45 | 25.11 | 194.82 | 4892 |
| 65 | 0 | 65 | | 16.26 | 12.97 | 79.77 | 26.30 | 188.08 | 4947 |
| 65 | 65 | 65 | Nitrate | 16.03 | 12.72 | 79.35 | 28.34 | 183.91 | 5212 |
| 65 | 0 | 0 | Nitrate | 16.49 | 13.28 | 80.53 | 29.02 | 193.63 | 5619 |
| 65 | 65 | 0 | | 16.67 | 13.53 | 81.16 | 27.75 | 198.14 | 5498 |
| 65 | 0 | 65 | | 16.46 | 13.29 | 80.74 | 28.07 | 194.06 | 5447 |
| 65 | 65 | 65 | Soda | 16.33 | 13.15 | 80.53 | 29.68 | 191.72 | 5690 |
| Difference for significance | | | | | | | | | |
| (P = .05) | | | | 0.70 | | 4.96 | | 8.62 | |
| (P = .01) | | | | 0.92 | | 6.57 | | 11.42 | |

Data are averages of 5 plots, each 3 rows wide by 24 feet long Fertilizer applied April 20, 1948; cane harvested November 8, 1948. Sources of nitrogen listed above; other fertilizer materials used were superphosphate and muriate of potash. The cane was not burned before being weighed; an 8% deduction in weight was made to allow for trash.

(Continued on page 365)

# RESULTS OE SUGARCANE VARIETY TESTS IN LOUISIANA DURING 1948

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Tests of sugarcane varieties to determine comparative yields of cane and available sugar under representative Louisiana conditions were repeated during 1948 in accordance with the plan and methods described in previous publications (3) (6). In such tests, the most promising of the unreleased seedlings produced at the Canal Point Station and varieties imported from other breeding centers are compared with varieties in present commercial culture. Use of a group of commercial varieties instead of a single check for control affords a broader base for comparisons and supplies information of practical importance on the current performance of released varieties.

During 1948 the following new C. P. seedlings were placed in plant cane tests: 43-13, 44-69, 44-72, 44-101, 44-153 and 44-155. Ordinarily from 6 to 9 new ones are added annually to the group under investigation. The total number included in tests is kept in balance with available research facilities by dropping, from time to time, unreleased varieties of proven unsuitability and released varieties which are no longer of any commercial importance.

## Weather Conditions

Table 1 shows rainfall recorded at the 9 test stations during 1948. Abnormally heavy rains at most of the stations during March caused extensive flooding of low lying areas. This was followed by a period of relatively low rainfall extending from April through August which reached critical proportions during summer months. At the Houma Station the rainfall over the 5-month period was more than 40% below normal. Drouth conditions during summer months greatly retarded the development of sugarcane, especially in poorly drained areas where root systems had been adversely affected as a result of flood conditions during March.

The heavy rainfall recorded at 5 of the stations during September was representative of a great part of the Sugar Belt. This probably accounted for the rapid late-season growth of sugarcane which caused a reversal of early indications of an extremely short crop. October was relatively dry, but rainfall during November and December was exceptionally heavy as indicated by a total of 19.69 inches recorded at the

**TABLE 1. Monthly rainfall at cooperative variety test sta tions during 1948.**

| Station | Monthly rainfall during 1948 (Inches) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Total |
| Greenwood | 5.62 | 3.61 | 12.62 | 2.70 | 1.85 | 2.99 | 1.68 | 1.86 | 16.39 | 1.80 | 9.81 | 6.35 | 67.28 |
| Raceland | 4.83 | 3.53 | 14.67 | 1.95 | 3.30 | 1.50 | 6.78 | 6.83 | 14.88 | 2.75 | 13.47 | 6.25 | 80.74 |
| Oaklawn | 4.80 | 4.20 | 8.80 | 3.10 | 2.10 | 0.25 | 6.90 | 2.35 | 8.95 | 0.90 | 10.25 | 8.00 | 60.60 |
| Albania | 6.79 | 4.88 | 8.12 | 4.35 | 1.80 | 1.59 | 6.48 | 0.95 | 4.75 | .80 | 9.07 | 10.15 | 59.73 |
| Erath | 6.05 | 3.29 | 9.64 | 4.37 | 1.50 | 1.61 | 5.90 | 6.35 | 2.60 | 2.60 | 10.40 | 7.75 | 62.06 |
| Stella | 9.00 | 6.00 | 7.53 | 2.85 | 2.63 | 2.89 | 3.39 | 4.37 | 3.12 | 1.55 | 12.42 | 5.46 | 61.21 |
| Alma* | 4.30 | 4.80 | 6.93 | 2.54 | 4.75 | 3.37 | 5.01 | 2.79 | 5.29 | 0.63 | 15.35 | 5.90 | 61.66 |
| Clovelly | 4.35 | 1.57 | 16.72 | 4.17 | 3.23 | 1.93 | 9.66 | 9.62 | 17.20 | 0.0 | 16.20 | 7.34 | 91.99 |
| Houma | 3.78 | 1.51 | 15.39 | 2.08 | 1.68 | 3.23 | 5.82 | 3.63 | 15.53 | 3.23 | 13.81 | 5.88 | 75.57 |
| Normal for Houma | 4.02 | 4.37 | 3.70 | 3.89 | 3.83 | 6.05 | 8.56 | 7.21 | 5.65 | 4.07 | 3.76 | 4.81 | 59.92 |

* Rainfall recorded at nearby Smithfield Plantation. Information for Alma proper not available.

Houma Station during the 2 months.

No severe freeze occurred during the harvest period but abnormally low temperatures on November 11 caused some terminal bud injury at a few exposed locations. A second cold spell during the period December 30-January 1, when a minimum of 27° F. was recorded at the Houma Station, caused more extensive damage but in this case also it was limited essentially to terminal bud injury.

## Experimental Technique

Field plots of 1/40 acre planted in the customary checker board arrangement are used in measuring comparative varietal yields. Individual varietal plantings at each station are ordinarily in duplicate or quadruplicate depending on the available seed supply and the estimated importance of the variety involved. From results of a statistical analysis on data summarized in tables 2, 3, and 4 it is indicated that an average over-all varietal difference of 2½ to 3 tons of cane per acre of 9 to 10 pounds of sugar per ton of cane and of 500 to 550 pounds of sugar per acre may ordinarily be regarded as significant. In the case of comparisons based on over-all averages shown in tables 6, 7, and 8, somewhat higher average differences are required for significance because of lesser numbers of individual observations. Observed differences in average varietal yields are interpreted in the light of underlying experimental errors.

In order to supply information on differences in varietal response as related to differences in field conditions, tests systematically distributed over the Sugarcane District are conducted on representative light and heavy soils. Results of light soil tests and heavy soil tests are shown in separate tabulations and interpreted accordingly. It is recognized also that differences between individual soils of the light series occasionally account for important differences in comparative varietal performance but as shown in a previous report, many of the seeming anomalies in varietal performance observed in individual tests will tend to "iron out" in the average of a number of tests.

## Tests on Light Soils

The following tabulation extracted from tables 2, 3 and 4, summarizes results obtained with important released varieties from plant, first and second stubble crops in tests on representative light soil areas:

| Variety | Indicated yield of 96° sugar per acre (pounds) | | | |
|---|---|---|---|---|
| | Plant cane | First stubble | Second stubble | Average of 3 crops |
| Co. 290 | 5375 | 2966 | 2275 | 3539 |
| C. P. 29/116 | 4887 | 3823 | 2989 | 3900 |
| C. P. 29/120 | 4157 | 3153 | 2874 | 3395 |
| C. P. 29/320 | 4193 | 2812 | 2652 | 3219 |
| C. P. 34/120 | 4657 | 3090 | 2987 | 3578 |
| C. P. 36/13 | 5251 | 3534 | 3556 | 4114 |
| C. P. 36/19 | 4479 | 3398 | 3166 | 3681 |
| C. P. 36/105 | 5357 | 3530 | 3750 | 4212 |
| C. P. 36/183 | 5333 | 3996 | 3998 | 4442 |

It will be noted that on the basis of results obtained during 1948 the varieties C. P. 36/13, 36/105 and 36/183 gave substantially more sugar per acre than the varieties Co. 290, C. P. 29/120, 29/320 and 34/120 which are now in extensive commercial culture. The production from C. P. 36/19 was approximately on a par with yields from Co. 290 and C. P. 34/120, while C. P. 29/116 maintained an intermediate position between the high yielding and low yielding varieties of the group. Included among other released varieties tested were C. P. 29/103 and 34/92. These proved rather consistently inferior to varieties now in extensive commercial culture. Average yields of sugar per acre obtained from C. P. 29/120 and 29/320 were somewhat lower than corresponding yields obtained from C. P. 34/120.

## Unreleased Varieties

In tests during 1948 the following unreleased C. P. seedlings nearly

equaled or surpassed the best commercial varieties in production of sugar per acre: C. P. 43/9, 43/13, 43/28, 43/32, 43/33, 44/69, 44/101, 44/153 and 44/155. The last 5 of the group were included in plant cane tests of the outfield series (table 2) and the first 4 appeared in both plant cane and first stubble tests (tables 2 and 3).

C. P. 44/101 produced more available sugar per acre than any other variety in each of 5 plantation tests (table 2). In the average of all tests it surpassed such heavy producers as C. P. 36/105 and 36/183 by approximately 1300 pounds of sugar per acre. At the Houma Station (table 5) it outyielded C. P. 34/120 in indicated yield of sugar per acre by approximately 1200 pounds in first stubble tests and by approximately 4500 pounds in second stubble tests. C. P. 44/101 has displayed relatively good milling qualities as indicated by a millability factor of 1.02 (4), and has averaged higher than C. P. 34/120 in indicated yield of sugar per ton of cane.

C. P. 44/155 produced slightly less sugar per acre than the best released varieties in plant cane tests (table 2) but surpassed C. P. 34/120 by a considerable margin in the average of first and second stubble tests at the Houma Station (table 5). This variety has displayed relatively good milling qualities (factor 1.02) and has averaged substantially higher than C. P. 44/101 in indicated yield of sugar per ton of cane.

C. P. 43/47 equaled C. P. 36/183 and surpassed C. P. 36/105 and 36/13 in production of sugar per acre in first stubble tests (table 3) but fell substantially below the average production of each of these varieties in plant cane tests (table 2). C. P. 43/47 is superior to C. P. 34/120 in milling qualities (factor 1.00) and has averaged somewhat higher in indicated yield of sugar per ton of cane.

In both plant cane and first stubble tests (tables 2 and 3) yields of sugar per acre obtained from C. P. 43/9, 43/28, 43/32, and 43/33 compared favorably with yields obtained from the best released varieties. C. P. 43/33 averaged approximately the same as C. P. 34/120 in indicated yield of sugar per ton of cane. The other 3 varieties averaged under C. P. 34/120 in this regard.

C. P. 44/69 and 44/153 were heavy producers of sugar per acre in plant cane tests (table 2). In limited stubble tests (table 5) C. P. 44/153 greatly surpassed and C. P. 44/69 did not quite equal C. P. 34/120 in yield of sugar per acre.

## Yield Responses of Certain Varieties in Recent Years

Analyses of varietal yield data obtained over a period of years have shown that the productiveness of many of the cultivated varieties has tended to change in the course of time (2) (5). Usually, but not always, the change is in the downward direction. For instance, the average yield of sugar per acre obtained with Co. 290 in field tests during the period 1944-48, inclusive, was approximately 68 percent of the average yield obtained on the same areas during the period 1931-35, inclusive. The decrease has amounted to approximately 22 percent in plant cane crops and approximately 38 percent in stubble crops. Among the possible explanations for such changes in performance are the many gradually changing conditions in the cultivated fields and in field practices (2, pp. 297-8) (7, p. 15).

Since, as the evidence shows, such changes are frequently of an order which could radically affect the comparative value of a variety within a relatively few years, it is obviously important to be on the alert for any sign of field changes influencing productivity in varieties being grown commercially.

Ordinarily the yield of cane per acre from a given variety will vary rather widely up and down in response to differences in weather conditions from year to year. Under such conditions a decrease in varietal yield capacity of the order commonly encountered may not be clearly apparent in a study of yield data obtained over relatively few years. For a period of 6 years or less such a retrogressive change may ordinarily be detected most readily by comparing the relative performance of the variety in question with that of some other variety. It has been shown that C. P. 29/116 has given less evidence of a time related change in productiveness than any other variety (2) and has proved a satisfactory means of measuring relative decreases or increases in other varieties. The following tabulation gives yields of sugar per acre obtained in the average of plant cane, first and second stubble expressed as percentages of corresponding yields obtained with C. P. 29/116:

| Crop | Relative yield of sugar per acre (C. P. 29/116 = 100) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 |
| **C. P. 34/120** | | | | | | | | |
| Plant cane | 108 | 97 | 98 | 110 | 94 | 93 | 85 | 95 |
| First stubble | | 110 | 125 | 108 | 110 | 109 | 88 | 81 |
| Second Stubble | | | 119 | 130 | 106 | 124 | 99 | 100 |
| **C. P. 36/105** | | | | | | | | |
| Plant cane | | | | 100 | 100 | 103 | 99 | 110 |
| First stubble | | | | | 95 | 109 | 127 | 92 |
| Second stubble | | | | | | 115 | 124 | 125 |
| **C. P. 36/19** | | | | | | | | |
| Plant cane | | | | 93 | 85 | 88 | 79 | 92 |
| First stubble | | | | | 87 | 99 | 106 | 89 |
| Second stubble | | | | | | 117 | 122 | 106 |
| **C. P. 36/183** | | | | | | | | |
| Plant cane | | | | 116 | 99 | 111 | 97 | 109 |
| First stubble | | | | | 108 | 112 | 115 | 105 |
| Second stubble | | | | | | 115 | 107 | 134 |
| **C. P. 36/13** | | | | | | | | |
| Plant cane | | | | | 112 | 112 | 96 | 107 |
| First stubble | | | | | | 116 | 113 | 92 |
| Second stubble | | | | | | | 107 | 119 |

It seems obvious from the data given above that relative yields obtained with C. P. 34/120 have decreased substantially over the 7-year period.

Relative yields from C. P. 36/13 have also tended downward, especially in first stubble crops but the available information is not considered sufficiently extensive to establish such a trend conclusively. Relative yields from C. P. 36/105, 36/19 and 36/183 do not give any evidence whatever of a decrease. In fact, second stubble yields from C. P. 36/105 and 36/183 have shown relative *increases* rather than *decreases*. Observed changes might be due entirely to the effect of annual differences in weather conditions or other environmental variations of a random nature. Observations on the comparative yields of varieties over such a short period must be interpreted with caution.

## Locality Effect

Differences in growing conditions between various sections of the Louisiana Sugar Belt have greatly influenced varietal preferences. For instance Co. 290 the standard variety in the western area for nearly 15 years was never an exceedingly important one on light soils of parishes east of the Atchafalaya River. As pointed out in a recent publication (1) there are 2 sorts of factors which might make one variety preferable over some other variety for a given section. In the first place, there are important sectional differences as to level of soil fertility and other factors affecting rate of growth, stubbling performance and maturity. In parishes west of the Atchafalaya River, generally speaking, yields of cane per acre are relatively low and stubble crops relatively less satisfactory, but the sugar content of the cane is ordinarily higher than at other places with the same variety. Thus a variety to be satisfactory in the western parishes must have superior vigor and good stubbling qualities but it is possible to make use in this area of varieties that would be considered unsuitable at other places because of low sugar content.

In addition it has been shown that some varieties will perform to rela-

tively better advantage in certain localities than in others. In other words, variety A may produce 10% more than variety B at one station and 10% less at another station. The reason for such behavior cannot be clearly determined in all cases. For instance in most parishes west of the Atchafalaya River, Co. 290, a variety of characteristically high vigor and good stubbling qualities, has also given yields of cane per acre which were relatively higher in comparison with other commercial varieties than yields obtained elsewhere. These 2 advantages combined to make Co. 290 a valuable variety for the area. On the other hand, C. P. 29/116 while more or less similar to Co. 290 in average vigor and maturing qualities, gave yields of cane per acre which in a relative sense were more nearly uniform at all stations, and if anything proportionately lower at western stations than elsewhere.

As a rule, whether or not a variety will give relatively higher or relatively lower yields at a given station in comparison with one or more other varieties cannot be accurately determined from a single year's results. The ultimate test is the consistency with which such departures from average performance occur from year to year. Table 6 gives results of a study of comparative varietal yields of sugar per acre to determine the extent to which varietal relationships at individual light soil stations have departed from average results and the consistency with which such departures have been maintained from year to year. Varieties such as Co. 290, C. P. 34/120, 36/105 and several others have been in comparative tests long enough to permit a highly accurate determination of whether or not a measurable locality effect on relative yield may be expected. In the case of others, additional tests will have to be made before conclusive results on this point can be obtained.

Results presented in table 6 show that C. P. 34/120 and Co. 290 gave essentially the same yield of sugar per acre in the average of tests at all light-soil stations during the past 5 years but the 2 varieties displayed important differences in relative yield at individual stations. C. P. 34/120 was distinctly more productive than Co. 290 at Raceland and Alma while the opposite was true at Albania and Erath. C. P. 29/116 on the other hand did not reveal very significant variations in relative yield from station to station. C. P. 29/320 showed highly significant positive departures from average results at Stella and Alma and a highly significant negative departure at Erath. C. P. 36/13 showed a significant positive departure at Raceland and a highly significant negative departure at Erath. C. P. 33/310 gave relative yields very significantly above its general average at Stella, very significantly below its average at Oaklawn and significantly below its average at Albania. Neither C. P. 36/105, 36/183 nor 36/19 has displayed a high degree of preferential adaptability. C. P. 36/105 showed a significantly negative departure and C. P. 36/19 a significantly positive departure at Oaklawn.

An analysis of yields obtained with C. P. 43/3, 43/9, 43/28, 43/32, 43/33 and 43/47 in 2 series of tests has revealed some apparently important variety × locality interactions, but it is felt that results of additional tests will have to be examined before a conclusive estimate of the locality effect on relative varietal yields can be made.

### Tests on Heavy Soils

Tables 7, 8 and 9 give results of variety tests on Sharkey clay. Tests of plant cane and first stubble (tables 6 and 7) were made on Greenwood, Oaklawn and Alma Plantations and at the Houma Station.

Tests of second stubble were made on Greenwood and Alma Plantations.

Of the 7 released varieties tested, C. P. 29/116 and 36/183 gave the best results on heavy soils, surpassing Co. 290, C. P. 34/120 and 36/105 by substantial margins in production of sugar per acre. C. P. 36/13 averaged significantly below C. P. 29/116 in yield of sugar per acre in plant cane tests (table 6) and slightly below C. P. 29/116 in first stubble tests (table 7).

C. P. 44/101 appearing in plant cane tests only showed the greatest promise of any of the varieties tested. It surpassed C. P. 29/116 by a wide margin in average yield of sugar per acre and produced cane of much higher average quality. C. P. 33/224 and 36/197 compared favorably with the best released varieties in indicated production of sugar per acre, while C. P. 43/47 and 43/49 gave yields of sugar per acre substantially below those obtained from C. P. 29/116.

## Tests on Muck Soil

Table 10 summarizes results of variety tests on areas of shallow muck near Cut Off which are considered typical of reclaimed marshes of southern Louisiana.

Confirming results of previous tests, C. P. 36/13 compared favorably with C. P. 28/19 in indicated yield of sugar per ton of cane and gave relatively satisfactory yields of cane per acre. It is considered the most suitable of the released varieties for culture on soils of this type. Among unreleased varieties tested C. P. 33/253 again displayed considerable promise. C. P. 38/26 and 44/101 in limited tests produced cane of highly acceptable quality and compared favorably with C. P. 36/13 in yield of sugar per acre.

**Table 2. Results of plant cane variety tests on light soils in Louisiana during 1948**

| Variety | Godchaux (Raceland)[1] | Oaklawn (Franklin)[2] | Albania (Jeanerette)[3] | Stella (St. Martinsville)[4] | Alma (Lakeland)[1] | Average |
|---|---|---|---|---|---|---|
| | 11-30† | 12-13 | 11-22 | 11-18 | 11-16 | |
| | Average yield of cane per acre (tons) | | | | | |
| *Co. 290 | 36.5 | 21.0 | 28.2 | 25.9 | 38.9 | 30.10 |
| **C. P. 29/116 | 41.3 | 20.2 | 18.9 | 27.6 | 42.7 | 30.14 |
| *C. P. 29/120 | 20.1 | 17.4 | 14.4 | 21.3 | 30.3 | 20.70 |
| *C. P. 29/320 | 24.8 | 11.7 | 14.5 | 21.9 | 28.8 | 20.34 |
| **C. P. 34/92 | 23.4 | 12.7 | 18.4 | 13.3 | 38.5 | 21.26 |
| *C. P. 34/120 | 26.6 | 16.8 | 21.4 | 18.9 | 32.8 | 23.30 |
| *C. P. 36/13 | 28.7 | 22.9 | 19.1 | 19.4 | 35.4 | 25.10 |
| *C. P. 36/19 | 22.9 | 17.3 | 17.5 | 20.4 | 27.6 | 21.14 |
| *C. P. 36/105 | 31.7 | 24.0 | 28.2 | 19.9 | 31.0 | 26.96 |
| **C. P. 36/183 | 37.5 | 22.6 | 24.7 | 24.5 | 34.3 | 28.52 |
| **C. P. 36/179 | 36.5 | 21.6 | 24.7 | 23.6 | 36.6 | 28.60 |
| **C. P. 37/5 | ---- | 22.6 | 27.3 | 20.8 | 35.6 | 27.98‡‡ |
| **C. P. 43/3 | ---- | 17.7 | 17.6 | 13.8 | 30.9 | 21.40‡‡ |
| **C. P. 43/9 | 39.0 | 24.3 | 28.5 | 26.0 | 34.4 | 30.44 |
| **C. P. 43/13 | 34.8 | 20.4 | 24.3 | 22.2 | 30.9 | 26.52 |
| **C. P. 43/28 | ---- | 21.2 | 28.8 | 24.6 | 42.9 | 30.78‡‡ |
| **C. P. 43/32 | 41.0 | 20.6 | 27.7 | 23.4 | 35.3 | 29.60 |
| **C. P. 43/33 | 34.6 | 18.9 | 26.5 | 17.9 | 31.7 | 25.92 |
| **C. P. 43/47 | 25.4 | 13.0 | 21.0 | 21.6 | 33.1 | 22.82 |
| **C. P. 44/69 | 34.1 | 26.3 | 29.1 | 21.8 | 29.4 | 28.14 |
| **C. P. 44/72 | 31.6 | 16.4 | 25.7 | 23.3 | 32.5 | 25.90 |
| **C. P. 44/101 | 38.2 | 27.2 | 34.4 | 26.2 | 42.1 | 33.62 |
| **C. P. 44/153 | 34.3 | 28.0 | 25.8 | 25.1 | 41.1 | 30.86 |
| **C. P. 44/155 | 28.6 | 19.3 | 20.2 | 19.6 | 30.9 | 23.72 |
| | Average indicated yield of 96° sugar per ton of cane (pounds)[5] | | | | | |
| *Co. 290 | 200.1 | 205.6 | 176.3 | 179.9 | 144.5 | 178.5 |
| **C. P. 29/116 | 152.8 | 213.7 | 181.1 | 162.0 | 138.5 | 162.1 |
| *C. P. 29/120 | 193.8 | 258.1 | 192.2 | 206.8 | 183.9 | 200.8 |
| *C. P. 29/320 | 213.0 | 201.0 | 214.2 | 185.6 | 206.1 | |
| **C. P. 34/92 | 174.2 | 210.8 | 179.0 | 191.5 | 118.1 | 161.2 |
| *C. P. 34/120 | 200.3 | 227.2 | 195.3 | 209.8 | 182.8 | 199.9 |
| *C. P. 36/13 | 207.9 | 235.9 | 204.3 | 234.7 | 181.7 | 209.2 |
| *C. P. 36/19 | 208.6 | 227.7 | 205.0 | 208.4 | 211.6 | 211.9 |
| *C. P. 36/105 | 192.3 | 217.7 | 201.2 | 208.6 | 181.9 | 198.7 |
| *C. P. 36/183 | 154.6 | 237.2 | 209.0 | 191.9 | 170.6 | 187.0 |
| **C. P. 36/179 | 163.4 | 211.7 | 168.7 | 192.6 | 137.9 | 169.9 |
| **C. P. 37/5 | ---- | 235.4 | 197.0 | 203.7 | 169.0 | 195.7‡‡ |
| **C. P. 43/3 | ---- | 201.0 | 199.0 | 191.5 | 177.9 | 188.7‡‡ |
| **C. P. 43/9 | 185.5 | 213.8 | 183.1 | 183.9 | 152.2 | 181.9 |
| **C. P. 43/13 | 179.8 | 217.4 | 188.2 | 182.0 | 189.0 | 189.6 |
| **C. P. 43/28 | ---- | 223.5 | 177.0 | 179.7 | 153.5 | 177.0‡‡ |
| **C. P. 43/32 | 165.1 | 216.4 | 180.1 | 209.3 | 176.6 | 184.0 |
| **C. P. 43/33 | 203.2 | 235.1 | 202.7 | 212.6 | 180.3 | 203.4 |
| **C. P. 43/47 | 210.5 | 226.5 | 204.5 | 203.4 | 176.6 | 200.0 |
| **C. P. 44/69 | 184.2 | 227.5 | 190.9 | 211.3 | 179.8 | 196.9 |
| **C. P. 44/72 | 177.0 | 236.2 | 197.7 | 188.0 | 185.5 | 192.7 |
| **C. P. 44/101 | 201.0 | 229.0 | 199.5 | 200.8 | 173.9 | 198.4 |
| **C. P. 44/153 | 193.4 | 217.6 | 159.1 | 185.7 | 147.9 | 178.7 |
| **C. P. 44/155 | 210.5 | 237.8 | 223.6 | 220.3 | 187.8 | 212.9 |

**Table 2—Continued. Results of plant cane variety tests on light soils in Louisiana during 1948.**

| Variety | Godchaux (Raceland)[1] 11-30† | Oaklawn (Franklin)[2] 12-13 | Albania (Jeanerette)[3] 11-22 | Stella (St. Martinsville)[4] 11-18 | Alma (Lakeland)[1] 11-16 | Average |
|---|---|---|---|---|---|---|
| Average indicated yield of 96° sugar per acre (pounds) | | | | | | |
| *Co. 290 | 7304 | 4318 | 4972 | 4659 | 5621 | 5375 |
| **C. P. 29/116 | 6311 | 4317 | 3423 | 4471 | 5914 | 4887 |
| *C. P. 29/120 | 3895 | 4143 | 2768 | 4405 | 5572 | 4157 |
| *C. P. 29/320 | 5282 | 2733 | 2914 | 4691 | 5345 | 4193 |
| **C. P. 34/92 | 4076 | 2677 | 3294 | 2547 | 4547 | 3428 |
| *C. P. 34/120 | 5328 | 3817 | 4179 | 3965 | 5996 | 4657 |
| *C. P. 36/13 | 5967 | 5402 | 3902 | 4553 | 6432 | 5251 |
| *C. P. 36/19 | 4777 | 3939 | 3587 | 4251 | 5840 | 4479 |
| *C. P. 36/105 | 6096 | 5225 | 5674 | 4151 | 5639 | 5357 |
| *C. P. 36/183 | 5797 | 5361 | 4953 | 4702 | 5852 | 5333 |
| **C. P. 36/179 | 5964 | 4573 | 4167 | 4545 | 5047 | 4859 |
| **C. P. 37/5 | ---- | 5320 | 5378 | 4237 | 6016 | 5476‡ |
| **C. P. 43/3 | ---- | 3558 | 3502 | 2643 | 5497 | 4038‡ |
| **C. P. 43/9 | 7234 | 5195 | 5218 | 4781 | 5236 | 5533 |
| **C. P. 43/13 | 6257 | 4435 | 4573 | 4040 | 5840 | 5029 |
| **C. P. 43/28 | ---- | 4738 | 5098 | 4421 | 6585 | 5449‡ |
| **C. P. 43/32 | 6769 | 4458 | 4989 | 4898 | 6234 | 5470 |
| **C. P. 43/33 | 7031 | 4443 | 5372 | 3806 | 5715 | 5273 |
| **C. P. 43/47 | 5347 | 2944 | 4294 | 4393 | 5845 | 4565 |
| **C. P. 44/69 | 6281 | 5983 | 5555 | 4606 | 5286 | 5542 |
| **C. P. 44/72 | 5593 | 3874 | 5081 | 4380 | 6029 | 4991 |
| **C. P. 44/101 | 7678 | 6229 | 6863 | 5261 | 7321 | 6670 |
| **C. P. 44/153 | 6634 | 6093 | 4105 | 4661 | 6079 | 5514 |
| **C. P. 44/155 | 6020 | 4590 | 4517 | 4318 | 5803 | 5050 |

[1] Yazoo very fine sandy loam. [2] Pharr silt loam.
[3] Iberia silt loam. [4] Vermilion silt loam. † Date of harvest.

‡ Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).

℗ Weighted average values given in this and subsequent tables.

* Averages shown are based on 4 yield determinations at each station.

** Averages shown are based on 2 yield determinations at each station.

**Table 3. Results of first stubble variety tests on light soils in Louisiana during 1948**

| Variety | Godchaux (Raceland)[1] 11-10† | Oaklawn (Franklin)[2] 11-1 | Albania (Jeanerette)[3] 11-24 | Roland's Farm (Erath)[4] 11-3 | Stella (St. Martinsville)[5] 10-28 | Alma (Lakeland)[1] 11-15 | Average |
|---|---|---|---|---|---|---|---|
| Average yield of cane per acre (tons) | | | | | | | |
| *Co. 281 | 13.0 | 8.9 | 1.9 | 3.3 | 7.0 | 16.2 | 8.38 |
| *Co. 290 | 17.7 | 21.2 | 15.2 | 5.7 | 14.3 | 22.1 | 16.03 |
| **C. P. 28/19 | 8.7 | 3.7 | 3.7 | 0.5 | 6.4 | 4.9 | 4.65 |
| *C. P. 29/116 | 22.4 | 21.1 | 18.5 | 7.8 | 23.7 | 33.9 | 21.23 |
| *C. P. 29/120 | 16.7 | 13.9 | 15.4 | 6.5 | 15.8 | 21.1 | 14.90 |
| *C. P. 29/320 | 17.9 | 11.8 | 10.6 | 3.0 | 14.9 | 21.4 | 13.27 |
| *C. P. 34/120 | 20.4 | 12.3 | 12.2 | 6.2 | 14.3 | 26.1 | 15.25 |
| *C. P. 36/13 | 18.2 | 18.9 | 15.9 | 6.6 | 15.0 | 21.7 | 16.05 |
| *C. P. 36/19 | 17.7 | 17.5 | 14.8 | 7.6 | 19.5 | 17.6 | 15.78 |
| *C. P. 36/105 | 19.1 | 16.8 | 17.1 | 11.1 | 15.5 | 22.9 | 17.08 |
| *C. P. 36/183 | 18.3 | 22.1 | 17.8 | 9.0 | 20.4 | 31.0 | 19.77 |
| **C. P. 36/161 | 21.0 | 20.8 | 20.8 | 15.2 | 16.6 | 18.0 | 18.73 |

**Table 3—Continued—Results of first stubble variety tests on light soils in Louisiana during 1948.**

| Variety | Godchaux (Raceland)[1] 11-10† | Oaklawn (Franklin)[2] 11-1 | Albania (Jeanerette)[3] 11-24 | Roland's Farm (Erath)[4] 11-3 | Stella (St. Martinsville)[5] 10-28 | Alma (Lakeland)[1] 11-15 | Average |
|---|---|---|---|---|---|---|---|
| Average indicated yield of 96° sugar per ton of cane (pounds)—(Continued) | | | | | | | |
| **C. P. 36/178 | 19.7 | 18.1 | 17.3 | 8.8 | 17.5 | 19.9 | 16.88 |
| **C. P. 36/179 | 20.2 | 17.8 | 17.7 | 4.2 | 16.9 | 19.8 | 16.10 |
| **C. P. 36/203 | 23.2 | 16.8 | 19.7 | 7.6 | 15.5 | 22.3 | 17.52 |
| **C. P. 37/5 | 13.0 | 15.1 | 12.3 | 7.5 | 19.6 | 18.6 | 14.35 |
| **C. P. 43/3 | ---- | 19.9 | 16.7 | 8.0 | 15.3 | 18.6 | 16.23‡ |
| **C. P. 43/9 | 18.6 | 22.1 | 14.8 | 8.5 | 21.7 | 28.2 | 18.98 |
| **C. P. 43/28 | ---- | 18.7 | 22.6 | 11.3 | 24.6 | 38.4 | 23.65‡ |
| **C. P. 43/32 | 23.6 | 19.4 | 22.9 | 9.2 | 19.5 | 22.5 | 19.52 |
| **C. P. 43/33 | 20.7 | 23.8 | 22.3 | 8.8 | 18.1 | 13.1 | 17.80 |
| **C. P. 43/47 | 20.9 | 18.9 | 21.1 | 10.8 | 18.0 | 24.9 | 19.10 |
| **C. P. 43/49 | ---- | 21.4 | 22.9 | 5.6 | 20.9 | 18.4 | 18.37‡ |
| **F. 36/819 | 16.5 | 10.9 | 9.2 | ---- | 9.5 | 19.0 | 11.23‡ |
| Average indicated yield of 96° sugar per ton of cane (pounds) | | | | | | | |
| *Co. 281 | 193.4 | 198.8 | 198.6 | 184.8 | 208.3 | 197.4 | 197.4 |
| *Co. 290 | 179.4 | 191.6 | 191.8 | 185.7 | 183.3 | 179.5 | 185.0 |
| **C. P. 28/19 | 231.0 | 230.2 | 216.8 | 180.3 | 194.5 | 206.9 | 215.5 |
| *C. P. 29/116 | 172.1 | 195.4 | 191.9 | 178.1 | 171.2 | 175.9 | 180.1 |
| *C. P. 29/120 | 226.7 | 223.4 | 218.2 | 206.3 | 219.5 | 182.8 | 211.6 |
| *C. P. 29/320 | 220.1 | 217.6 | 211.8 | 212.1 | 210.4 | 203.2 | 211.9 |
| *C. P. 34/120 | 208.5 | 203.4 | 205.8 | 195.4 | 203.9 | 197.1 | 202.7 |
| *C. P. 36/13 | 234.7 | 212.0 | 227.5 | 194.4 | 224.6 | 214.7 | 220.2 |
| *C. P. 36/19 | 223.3 | 222.9 | 215.2 | 224.6 | 203.1 | 209.4 | 215.3 |
| *C. P. 36/105 | 212.2 | 211.8 | 209.5 | 194.9 | 213.5 | 197.2 | 206.7 |
| *C. P. 36/183 | 221.2 | 205.6 | 198.4 | 207.4 | 202.8 | 188.6 | 202.1 |
| **C. P. 36/161 | 184.0 | 183.2 | 186.8 | 188.7 | 185.4 | 188.2 | 185.9 |
| **C. P. 36/178 | 206.7 | 205.7 | 201.0 | 206.0 | 200.6 | 204.4 | 204.0 |
| **C. P. 36/179 | 188.9 | 209.0 | 174.9 | 187.6 | 212.2 | 169.2 | 190.0 |
| **C. P. 36/203 | 198.2 | 184.9 | 188.0 | 187.2 | 209.2 | 179.5 | 191.0 |
| **C. P. 37/5 | 225.2 | 223.7 | 209.2 | 216.6 | 207.3 | 206.4 | 213.8 |
| **C. P. 43/3 | ---- | 173.8 | 196.6 | 176.7 | 200.4 | 200.0 | 191.6 |
| **C. P. 43/9 | 196.6 | 207.9 | 188.2 | 195.7 | 201.2 | 178.9 | 194.2 |
| **C. P. 43/28 | ---- | 195.0 | 198.2 | 167.6 | 165.1 | 170.4 | 179.5 |
| **C. P. 43/32 | 191.8 | 207.0 | 191.7 | 203.6 | 201.6 | 195.6 | 197.5 |
| **C. P. 43/33 | 195.5 | 198.2 | 205.6 | 199.3 | 200.8 | 206.3 | 200.7 |
| **C. P. 43/47 | 222.2 | 208.1 | 218.2 | 197.4 | 209.7 | 201.8 | 210.4 |
| **C. P. 43/49 | ---- | 163.6 | 143.9 | 155.1 | 152.6 | 149.2 | 154.6 |
| **F. 36/819 | 215.0 | 217.7 | 217.0 | ---- | 214.4 | 208.4 | 215.9 |
| Average indicated yield of 96° sugar per acre (pounds) | | | | | | | |
| *Co. 281 | 2514 | 1769 | 377 | 610 | 1458 | 3198 | 1654 |
| *Co. 290 | 3175 | 4062 | 2915 | 1058 | 2621 | 3967 | 2966 |
| **C. P. 28/19 | 2010 | 852 | 802 | 90 | 1245 | 1014 | 1002 |
| *C. P. 29/116 | 3855 | 4123 | 3550 | 1389 | 4057 | 5963 | 3823 |
| *C. P. 29/120 | 3786 | 3105 | 3360 | 1341 | 3468 | 3857 | 3153 |
| *C. P. 29/320 | 3940 | 2568 | 2245 | 636 | 3135 | 4348 | 2812 |
| *C. P. 34/120 | 4253 | 2502 | 2511 | 1211 | 2916 | 5144 | 3090 |
| *C. P. 36/13 | 4272 | 4007 | 3617 | 1283 | 3369 | 4659 | 3534 |
| *C. P. 36/19 | 3952 | 3901 | 3185 | 1707 | 3960 | 3685 | 3398 |
| *C. P. 36/105 | 4053 | 3558 | 3582 | 2163 | 3309 | 4516 | 3530 |
| *C. P. 36/183 | 4048 | 4544 | 3532 | 1867 | 4137 | 5847 | 3996 |
| **C. P. 36/161 | 3864 | 3811 | 3885 | 2868 | 3078 | 3388 | 3482 |

**Table 3—Continued. Results of first stubble variety tests on light soils in Louisiana during 1948.**

| Variety | Godchaux (Raceland)[1] 11-10† | Oaklawn (Franklin)[2] 11-1 | Albania (Jeanerette)[3] 11-24 | Roland's Farm (Erath)[4] 11-3 | Stella (St. Martinsville)[5] 10-28 | Alma (Lakeland)[1] 11-15 | Average |
|---|---|---|---|---|---|---|---|
| Average indicated yield of 96° sugar per acre (pounds)—(Continued) | | | | | | | |
| **C. P. 36/178 | 4072 | 3723 | 3477 | 1813 | 3510 | 4068 | 3444 |
| **C. P. 36/179 | 3816 | 3720 | 3096 | 788 | 3586 | 3350 | 3059 |
| **C. P. 36/203 | 4598 | 3106 | 3704 | 1423 | 3243 | 4003 | 3346 |
| **C. P. 37/5 | 2928 | 3378 | 2573 | 1624 | 4063 | 3839 | 3068 |
| **C. P. 43/3 | ---- | 3459 | 3283 | 1414 | 3066 | 3720 | 3109 |
| **C. P. 43/9 | 3657 | 4595 | 2785 | 1663 | 4366 | 5045 | 3685 |
| **C. P. 43/28 | ---- | 3646 | 4479 | 1894 | 4061 | 6543 | 4245 |
| **C. P. 43/32 | 4526 | 4016 | 4390 | 1873 | 3931 | 4401 | 3856 |
| **C. P. 43/33 | 4047 | 4717 | 4585 | 1754 | 3634 | 2703 | 3573 |
| **C. P. 43/47 | 4644 | 3933 | 4604 | 2132 | 3775 | 5025 | 4019 |
| **C. P. 43/49 | ---- | 3501 | 3295 | 869 | 3189 | 2745 | 2840 |
| **F. 36/819 | 3547 | 2373 | 1996 | ---- | 2037 | 3960 | 2425 |

* Averages shown are based on 4 yield determinations at each station.
** Averages shown are based on 2 yield determinations at each station.
[1] Yazoo very fine sandy loam. [2] Pharr silt loam. [3] Iberia silt loam.
[4] Vermilion silt loam. [5] Olivier silt loam. † Date of harvest.
‡ Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).

**Table 4. Results of second stubble variety tests on light soils in Louisiana during 1948.**

| Variety | Godchaux (Raceland)[1] 10-19† | Albania (Jeanerette)[2] 10-25 | Stella (St. Martinsville)[3] 10-27 | Alma (Lakeland)[1] 10-21 | Average |
|---|---|---|---|---|---|
| Average yield of cane per acre (tons) | | | | | |
| *Co. 281 | 11.1 | 1.7 | 3.1 | 5.8 | 5.42 |
| *Co. 290 | 17.2 | 13.5 | 10.9 | 17.9 | 14.87 |
| *C. P. 28/19 | 8.9 | 2.7 | 6.4 | 11.4 | 7.35 |
| **C. P. 29/103 | 9.2 | 3.8 | 18.6 | 19.9 | 12.87 |
| *C. P. 29/116 | 24.5 | 9.4 | 17.8 | 26.7 | 19.60 |
| *C. P. 29/120 | 21.0 | 9.1 | 13.3 | 18.3 | 15.42 |
| *C. P. 29/320 | 16.3 | 7.6 | 13.3 | 19.9 | 14.27 |
| *C. P. 34/120 | 16.5 | 10.3 | 18.7 | 23.1 | 17.15 |
| *C. P. 36/13 | 22.5 | 11.9 | 13.2 | 25.9 | 18.37 |
| *C. P. 36/19 | 20.2 | 13.4 | 18.2 | 18.0 | 17.45 |
| *C. P. 36/105 | 25.9 | 14.8 | 15.7 | 23.6 | 20.00 |
| *C. P. 36/183 | 29.7 | 15.5 | 21.4 | 28.4 | 23.75 |
| **C. P. 36/160 | 23.0 | 18.3 | 21.0 | 20.7 | 20.75 |
| **C. P. 36/161 | 29.2 | 15.3 | 18.4 | 22.8 | 21.42 |
| **C. P. 36/178 | 21.1 | 14.4 | 19.2 | 25.4 | 20.02 |
| **C. P. 36/179 | 23.5 | 12.4 | 18.5 | 23.9 | 19.57 |
| **C. P. 36/197 | 28.0 | 12.6 | 15.9 | 29.0 | 21.37 |
| **C. P. 36/203 | 23.3 | 16.1 | 17.7 | 25.1 | 20.55 |
| **C. P. 37/5 | 21.9 | 13.0 | 12.0 | 13.6 | 15.12 |
| **C. P. 38/26 | 17.1 | 14.2 | 21.3 | 22.2 | 18.70 |
| **F. 31/762 | 25.9 | 18.9 | 21.7 | 27.8 | 23.57 |
| **F. 36/671 | 5.8 | 9.0 | 7.2 | 12.9 | 8.72 |
| **F. 36/819 | 13.1 | 9.1 | 9.8 | 21.2 | 13.30 |

**Table 4—Continued. Results of second stubble variety tests on light soils in Louisiana during 1948**

| Variety | Godchaux (Raceland)[1] 10-19† | Albania (Jeanerette)[2] 10-25 | Stella (St. Martinsville)[3] 10-27 | Alma (Lakeland)[1] 10-21 | Average |
|---|---|---|---|---|---|
| Average indicated yield of 96° sugar per ton of cane (pounds) | | | | | |
| Co. 281 | 121.7 | 169.7 | 212.6 | 161.6 | 149.3 |
| Co. 290 | 131.0 | 141.0 | 199.3 | 154.8 | 153.0 |
| C. P. 28/19 | 171.9 | 197.4 | 219.5 | 190.7 | 191.8 |
| C. P. 29/103 | 142.1 | 197.0 | 199.0 | 149.9 | 169.8 |
| C. P. 29/116 | 139.6 | 180.9 | 180.4 | 135.8 | 152.5 |
| C. P. 29/120 | 167.3 | 182.6 | 214.2 | 189.7 | 186.4 |
| C. P. 29/320 | 162.9 | 197.3 | 219.7 | 177.5 | 185.8 |
| C. P. 34/120 | 150.0 | 173.8 | 203.5 | 167.8 | 174.2 |
| C. P. 36/13 | 174.2 | 196.8 | 242.1 | 184.0 | 193.6 |
| C. P. 36/19 | 154.7 | 195.5 | 205.2 | 176.8 | 181.4 |
| C. P. 36/105 | 162.9 | 202.7 | 223.5 | 181.0 | 187.5 |
| C. P. 36/183 | 134.3 | 182.5 | 196.9 | 174.7 | 168.3 |
| C. P. 36/160 | 124.6 | 162.6 | 178.3 | 135.0 | 149.2 |
| C. P. 36/161 | 129.1 | 167.4 | 186.4 | 164.0 | 157.6 |
| C. P. 36/178 | 127.8 | 191.0 | 193.3 | 167.2 | 167.4 |
| C. P. 36/179 | 140.2 | 171.0 | 217.9 | 168.3 | 172.0 |
| C. P. 36/197 | 165.4 | 200.0 | 245.4 | 187.4 | 192.9 |
| C. P. 36/203 | 139.8 | 163.3 | 212.9 | 167.9 | 168.7 |
| C. P. 37/5 | 148.6 | 192.9 | 207.3 | 175.2 | 175.8 |
| C. P. 38/26 | 157.5 | 185.0 | 203.8 | 173.2 | 180.6 |
| F. 31/762 | 159.5 | 189.1 | 194.8 | 168.7 | 176.3 |
| F. 36/671 | 185.5 | 225.5 | 256.2 | 192.3 | 213.1 |
| F. 36/819 | 140.3 | 170.0 | 207.9 | 168.7 | 169.2 |
| Average indicated yield of 96° sugar per acre (pounds) | | | | | |
| Co. 281 | 1351 | 288 | 659 | 937 | 809 |
| Co. 290 | 2253 | 1903 | 2172 | 2771 | 2275 |
| C. P. 28/19 | 1530 | 533 | 1405 | 2174 | 1410 |
| C. P. 29/103 | 1307 | 749 | 3701 | 2983 | 2185 |
| C. P. 29/116 | 3420 | 1700 | 3211 | 3626 | 2989 |
| C. P. 29/120 | 3513 | 1662 | 2849 | 3471 | 2874 |
| C. P. 29/320 | 2655 | 1499 | 2922 | 3532 | 2652 |
| C. P. 34/120 | 2475 | 1790 | 3805 | 3876 | 2987 |
| C. P. 36/13 | 3919 | 2342 | 3196 | 4766 | 3556 |
| C. P. 36/19 | 3125 | 2620 | 3735 | 3182 | 3166 |
| C. P. 36/105 | 4219 | 3000 | 3509 | 4272 | 3750 |
| C. P. 36/183 | 3989 | 2829 | 4214 | 4961 | 3998 |
| C. P. 36/160 | 2866 | 2976 | 3744 | 2794 | 3095 |
| C. P. 36/161 | 3770 | 2561 | 3430 | 3739 | 3375 |
| C. P. 36/178 | 2697 | 2750 | 3711 | 4247 | 3351 |
| C. P. 36/179 | 3295 | 2120 | 4031 | 4022 | 3367 |
| C. P. 36/197 | 4631 | 2520 | 3902 | 5435 | 4122 |
| C. P. 36/203 | 3257 | 2629 | 3768 | 4214 | 3467 |
| C. P. 37/5 | 3254 | 2508 | 2488 | 2383 | 2658 |
| C. P. 38/26 | 2693 | 2627 | 4341 | 3845 | 3377 |
| F. 31/762 | 4131 | 3574 | 4227 | 4690 | 4155 |
| F. 36/671 | 1076 | 2029 | 1845 | 2481 | 1858 |
| F. 36/819 | 1838 | 1547 | 2037 | 3576 | 2249 |

[1] Yazoo very fine sandy loam. [2] Iberia silt loam.
[3] Vermilion silt loam. † Date of harvest.
* Averages shown are based on 4 yield determinations at each station.
** Averages shown are based on 2 yield determinations at each station.

**Table 5**
**Results of preliminary agronomic tests at the Houma Station with varieties recently placed in cooperative plantation trials. (Soil type: Yazoo very fine sandy loam).**

| Variety | Plant Cane 12-4-48[1] | | | First Stubble 11-13 | | | Second Stubble 10-19 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Av. yield of cane per acre | Av. indicated yield of 96° sugar | | Av. yield of cane per acre | Av. indicated yield of 96° sugar | | Av. yield of cane per acre | Av. indicated yield of 96° sugar | |
| | | Per ton of cane | Per acre | | Per ton of cane | Per acre | | Per ton of cane | Per acre |
| | (tons) | (Lbs.) | (Lbs.) | (tons) | (Lbs.) | (Lbs.) | (tons) | (Lbs.) | (Lbs.) |
| Co. 281 | 13.95 | 167.4 | 2335 | 18.77 | 182.9 | 3433 | 4.88 | 161.0 | 786 |
| C. P. 29/320 | 17.00 | 198.6 | 3376 | 23.30 | 206.6 | 4813 | 15.33 | 178.4 | 2734 |
| C. P. 34/120 | 32.54 | 189.3 | 6160 | 31.06 | 197.3 | 6128 | 19.90 | 152.7 | 3037 |
| C. P. 44/69 | ----- | ----- | ---- | 26.18 | 190.6 | 4990 | 24.20 | 176.2 | 4264 |
| C. P. 44/72 | ----- | ----- | ---- | 26.20 | 204.7 | 5363 | 18.41 | 161.3 | 2970 |
| C. P. 44/92 | ----- | ----- | ---- | 26.40 | 210.9 | 5568 | 36.70 | 173.7 | 6375 |
| C. P. 44/101 | ----- | ----- | ---- | 36.04 | 204.3 | 7363 | 43.85 | 172.6 | 7569 |
| C. P. 44/153 | ----- | ----- | ---- | 36.66 | 186.3 | 6830 | 36.89 | 143.3 | 5286 |
| C. P. 44/155 | ----- | ----- | ---- | 31.44 | 205.2 | 6451 | 31.97 | 187.0 | 5978 |
| C. P. 45/73 | 25.89 | 204.7 | 5300 | 24.80 | 231.4 | 5739 | 11.44 | 151.9 | 1738 |
| C. P. 45/119 | 18.34 | 190.7 | 3497 | 18.02 | 202.3 | 3645 | 14.48 | 143.3 | 2075 |
| C. P. 45/122 | 26.65 | 152.9 | 4075 | 29.10 | 164.1 | 4775 | 43.12 | 113.2 | 4881 |
| C. P. 45/125 | 28.08 | 197.7 | 5551 | 22.26 | 222.5 | 4953 | 13.86 | 140.4 | 1946 |
| C. P. 45/137 | 27.61 | 178.2 | 4920 | 28.66 | 180.1 | 5162 | 8.87 | 114.6 | 1016 |
| C. P. 45/155 | ----- | ----- | ---- | 27.32 | 159.7 | 4363 | 12.01 | 104.9 | 1260 |
| C. P. 45/184 | 29.20 | 187.6 | 5478 | 27.96 | 178.4 | 4988 | 28.51 | 144.4 | 4117 |

[1] Date of harvest.

**Table 6**
**Results of a study of yield data from cooperative tests of sugarcane varieties on light soils in Louisiana during recent years to determine the effect of differences between stations on relative varietal yield of sugar per acre.**

| Variety | Number of series of tests in the study | Station departure from over-all relative varietal yield (Variety x Locality interaction term)[1] | | | | | | Over-all relative yield[2] |
|---|---|---|---|---|---|---|---|---|
| | | Race-land | Oak-lawn | Al-bania | Erath | Stella | Alma | |
| Co. 290 | 12 | — | + | + | +** | — | —** | 100 |
| C. P. 34/120 | 12 | +* | — | —* | — | —* | +** | 100 |
| C. P. 29/116 | 12 | — | — | — | — | + | + | 98 |
| C. P. 29/320 | 12 | + | — | — | —** | +** | +** | 80 |
| C. P. 34/92 | 12 | — | +** | +* | —** | —* | +* | 85 |
| C. P. 33/310 | 10 | + | —** | —* | — | +** | + | 82 |
| C. P. 36/13 | 6 | +* | + | + | —** | — | + | 113 |
| C. P. 36/19 | 10 | — | +* | + | — | + | —* | 96 |
| C. P. 36/105 | 10 | + | —* | + | + | — | + | 104 |
| C. P. 36/183 | 10 | + | + | + | — | — | + | 112 |
| C. P. 43/3 | 2 | + | + | + | — | —* | + | 97 |
| C. P. 43/9 | 2 | + | + | —** | + | + | — | 105 |

**Table 6—Continued**
**Results of a study of yield data from cooperative tests of sugarcane varieties on light soils in Louisiana during recent years to determine the effect of differences between stations on relative varietal yield of sugar per acre.**

| Variety | Number of series of tests in the study | Station departure from over-all relative varietal yield (Variety x Locality interaction term)[1] | | | | | | Over-all relative yield[2] |
|---|---|---|---|---|---|---|---|---|
| | | Race-land | Oak-lawn | Al-bania | Erath | Stella | Alma | |
| C. P. 43/28 | 2 | + | —* | + | —** | — | +** | 115 |
| C. P. 43/32 | 2 | + | — | +* | — | — | —* | 113 |
| C. P. 43/33 | 2 | + | +** | +** | — | — | —** | 105 |
| C. P. 43/47 | 2 | + | — | + | — | — | — | 110 |

[1] The various symbols show the order of station departure from over-all **relative** yield of the variety:
+** = Very significantly above over-all average (P.01 or lower).
—** = Very significantly below over-all average (P.01 or lower).
+* = Significantly above over-all average (P.01 to .05).
—* = Significantly below over-all average (P.01 to .05).
\+ = Insignificantly above over-all average (P. above .05).
— = Insignificantly below over-all average (P. above .05).

[2] Based on results during the period 1944-48, inclusive.

**Table 7. Results of plant cane variety tests on heavy soils in Louisiana during 1948***

| Variety | (Greenwood[1] (Thibodaux) | Oaklawn[1] (Franklin) | Alma[1] (Lakeland) | Station[1] (Houma) | Average |
|---|---|---|---|---|---|
| | 12-6† | 12-14 | 11-16 | 12-4 | |
| | Average yield of cane per acre (tons) | | | | |
| Co. 290 | 12.6 | 22.4 | 36.1 | 20.2 | 22.82 |
| C. P. 29/116 | 19.2 | 20.9 | 36.5 | 26.7 | 25.82 |
| C. P. 34/92 | 9.6 | 13.5 | 33.9 | 6.6 | 15.90 |
| C. P. 34/120 | 12.2 | 16.7 | 31.7 | 10.0 | 17.65 |
| C. P. 36/13 | 5.3 | 22.3 | 33.7 | 14.7 | 19.00 |
| C. P. 36/105 | 14.9 | 25.4 | 22.4 | 9.9 | 18.15 |
| C. P. 36/183 | 17.4 | 19.7 | 36.8 | 13.0 | 21.72 |
| C. P. 33/224 | 16.9 | 22.2 | 40.5 | 24.9 | 26.12 |
| C. P. 36/197 | 16.2 | 13.3 | 30.7 | 21.1 | 20.32 |
| C. P. 43/47 | 16.5 | 23.3 | 32.3 | 6.9 | 19.75 |
| C. P. 43/49 | 16.9 | 27.0 | 35.0 | 20.0 | 24.72 |
| C. P. 44/101 | 23.9 | ---- | 32.3 | 36.5 | 29.02‡ |
| | Average indicated yield of 96° sugar per ton of cane (pounds) | | | | |
| Co. 290 | 172.3 | 203.2 | 140.1 | 188.8 | 170.9 |
| C. P. 29/116 | 171.1 | 207.9 | 143.6 | 200.5 | 176.5 |
| C. P. 34/92 | 164.4 | 214.8 | 158.8 | 187.1 | 174.5 |
| C. P. 34/120 | 188.2 | 238.4 | 182.3 | 209.7 | 200.5 |
| C. P. 36/13 | 185.8 | 249.6 | 170.4 | 215.4 | 203.4 |
| C. P. 36/105 | 196.7 | 218.9 | 173.7 | 189.2 | 196.4 |
| C. P. 36/183 | 193.7 | 230.2 | 164.2 | 211.4 | 192.2 |
| C. P. 33/224 | 158.5 | 202.5 | 144.7 | 209.4 | 175.7 |
| C. P. 36/197 | 210.6 | 247.0 | 175.7 | 217.7 | 205.3 |
| C. P. 43/47 | 197.6 | 233.5 | 168.6 | 191.6 | 195.8 |
| C. P. 43/49 | 147.6 | 176.9 | 130.3 | 160.0 | 152.0 |
| C. P. 44/101 | 188.5 | ----- | 165.2 | 202.5 | 200 7 |

**Table 7—Continued. Results of plant cane variety tests on heavy soils in Louisiana during 1948***

| Variety | (Greenwood[1] (Thibodaux) | Oaklawn[1] (Franklin) | Alma[1] (Lakeland) | Station[1] (Houma) | Average |
|---|---|---|---|---|---|
| | 12-6† | 12-14 | 11-16 | 12-4 | |
| | Average indicated yield of 96° sugar per acre (pounds) | | | | |
| Co. 290 | 2171 | 4552 | 5058 | 3814 | 3899 |
| C. P. 29/116 | 3285 | 4345 | 5241 | 5353 | 4556 |
| C. P. 34/92 | 1578 | 2900 | 5383 | 1235 | 2774 |
| C. P. 34/120 | 2296 | 3981 | 5779 | 2097 | 3538 |
| C. P. 36/13 | 985 | 5566 | 5742 | 3166 | 3865 |
| C. P. 36/105 | 2931 | 5560 | 3891 | 1873 | 3564 |
| C. P. 36/183 | 3370 | 4535 | 6043 | 2748 | 4174 |
| C. P. 33/224 | 2679 | 4495 | 5860 | 5214 | 4562 |
| C. P. 36/197 | 3412 | 3285 | 5394 | 4593 | 4171 |
| C. P. 43/47 | 3260 | 5441 | 5446 | 1322 | 3867 |
| C. P. 43/49 | 2494 | 4776 | 4560 | 3200 | 3757 |
| C. P. 44/101 | 4505 | ---- | 5336 | 7391 | 5825 |

[1] Sharkey clay.
† Date of harvest.
‡ Missing plot value calculated according to Yates formula.
* Plantings at individual stations consisted of 1 plot of C. P. 33/224, 1 plot of C. P. 44/101 and 4 plots of each of the other varieties shown.

**Table 8. Results of first stubble variety tests on heavy soil in Louisiana during 1948.**

| Variety | Greenwood[1] (Thibodaux) | Oaklawn[1] (Franklin) | Alma[1] (Lakeland) | Station[1] (Houma) | Average* |
|---|---|---|---|---|---|
| | 11-12† | 12-14 | 11-15 | 11-11 | |
| | Average yield of cane per acre (tons) | | | | |
| Co. 290 | 11.0 | 24.4 | 13.3 | 25.1 | 18.45 |
| C. P. 29/116 | 24.3 | 22.2 | 28.9 | 30.0 | 26.35 |
| C. P. 29/120 | 11.5 | 20.8 | 17.2 | 22.9 | 18.10 |
| C. P. 34/120 | 15.7 | 13.3 | 15.5 | 29.4 | 18.47 |
| C. P. 36/13 | 20.8 | 17.2 | 21.4 | 28.8 | 22.05 |
| C. P. 36/105 | 16.4 | 18.5 | 18.7 | 23.3 | 19.22 |
| C. P. 36/183 | 21.3 | 22.6 | 27.2 | 26.1 | 24.30 |
| C. P. 33/224 | 23.1 | 16.7 | 26.2 | 33.1 | 24.77 |
| C. P. 36/197 | 21.7 | 12.2 | 24.4 | 26.0 | 21.07 |
| | Average indicated yield of 96° sugar per ton of cane (pounds) | | | | |
| Co. 290 | 138.1 | 216.8 | 184.5 | 179.1 | 186.4 |
| C. P. 29/116 | 146.9 | 213.5 | 165.9 | 174.6 | 174.0 |
| C. P. 29/120 | 151.8 | 230.7 | 203.6 | 194.5 | 200.3 |
| C. P. 34/120 | 162.8 | 230.3 | 189.3 | 184.3 | 189.1 |
| C. P. 36/13 | 154.8 | 248.8 | 211.6 | 194.0 | 199.7 |
| C. P. 36/105 | 163.7 | 227.6 | 203.2 | 191.7 | 197.2 |
| C. P. 36/183 | 150.4 | 242.1 | 192.4 | 181.0 | 191.7 |
| C. P. 33/224 | 141.4 | 205.3 | 179.9 | 164.8 | 170.2 |
| C. P. 36/197 | 178.7 | 249.9 | 213.7 | 201.7 | 206.3 |

**Table 8—Continued. Results of first stubble variety tests on heavy soil in Louisiana during 1948.**

| Variety | Greenwood[1] (Thibodaux) | Oaklawn[1] (Franklin) | Alma[1] (Lakeland) | Station[1] (Houma) | Average* |
|---|---|---|---|---|---|
| | 11-12† | 12-14 | 11-15 | 11-11 | |
| | Average indicated yield of 96° sugar per acre (pounds) | | | | |
| Co. 290 | 1519 | 5290 | 2454 | 4495 | 3439 |
| C. P. 29/116 | 3570 | 4740 | 4795 | 5238 | 4586 |
| C. P. 29/120 | 1746 | 4799 | 3502 | 4454 | 3625 |
| C. P. 34/120 | 2556 | 3063 | 2934 | 5418 | 3493 |
| C. P. 36/13 | 3220 | 4279 | 4528 | 5587 | 4404 |
| C. P. 36/105 | 2685 | 4211 | 3800 | 4467 | 3791 |
| C. P. 36/183 | 3204 | 5471 | 5233 | 4724 | 4658 |
| C. P. 33/224 | 3266 | 3429 | 4713 | 5455 | 4216 |
| C. P. 36/197 | 3878 | 3049 | 5214 | 5244 | 4346 |

[1] Sharkey clay.
† Date of harvest.
* Averages shown are based on 4 determinations at each station.

**Table 9**
**Results of second stubble variety tests on heavy soils in Louisiana during 1948.**

| Variety | Greenwood[1] (Thibodaux) | Alma[1] (Lakeland) | Average* |
|---|---|---|---|
| | 10-18† | 10-21 | |
| | Average yield of cane per acre (tons) | | |
| Co. 290 | 11.7 | 6.2 | 8.95 |
| C. P. 29/116 | 15.0 | 12.7 | 13.85 |
| C. P. 29/120 | 13.0 | 15.5 | 14.25 |
| C. P. 34/120 | 12.3 | 15.5 | 13.90 |
| C. P. 36/105 | 15.2 | 9.2 | 12.20 |
| C. P. 36/183 | 16.3 | 14.4 | 15.35 |
| C. P. 31/551 | 14.0 | 9.6 | 11.80 |
| | Average indicated yield of 96° sugar per ton of cane (pounds) | | |
| Co. 290 | 92.4 | 158.9 | 109.7 |
| C. P. 29/116 | 101.5 | 156.8 | 126.8 |
| C. P. 29/120 | 139.2 | 167.2 | 154.5 |
| C. P. 34/120 | 115.5 | 160.2 | 140.4 |
| C. P. 36/105 | 124.2 | 145.3 | 132.1 |
| C. P. 36/183 | 98.3 | 134.4 | 115.2 |
| C. P. 31/551 | 103.3 | 136.6 | 116.8 |
| | Average indicated yield of 96° sugar per acre (pounds) | | |
| Co. 290 | 1081 | 861 | 971 |
| C. P. 29/116 | 1522 | 1991 | 1756 |
| C. P. 29/120 | 1810 | 2592 | 2201 |
| C. P. 34/120 | 1421 | 2483 | 1952 |
| C. P. 36/105 | 1888 | 1337 | 1612 |
| C. P. 36/183 | 1602 | 1935 | 1768 |
| C. P. 31/551 | 1446 | 1311 | 1378 |

[1] Sharkey Clay.
† Date of harvest.
* Averages shown are based on 4 determinations at each station.

**Table 10**
**Results of variety tests on muck soil[1] at Clovelly Farms during 1948.**

| Variety | Plant Cane 12-52[2] | | | | First Stubble 11-8 | | | | Second Stubble 11-8 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Av. yield of cane[3] per acre | Av. indicated yield of 96° sugar | | | Av. yield of cane[3] per acre | Av. indicated yield of 96° sugar | | | Av. yield of cane[3] per acre | Av. indicated yield of 96° sugar | | |
| | | Per ton of cane | Per acre | | | Per ton of cane | Per acre | | | Per ton of cane | Per acre | |
| | (tons) | (Lbs.) | (Lbs.) | | (tons) | (Lbs.) | (Lbs.) | | (tons) | (Lbs.) | (Lbs.) | |
| Co. 281 | 8.1 | 203.1 | 1645 | | 9.0 | 211.7 | 1905 | | 3.6 | 201.8 | 726 | |
| C. P. 28/19 | | | | | | | | | | | | |
| C. P. 29/103 | | | | | | | | | | | | |
| C. P. 29/120 | 13.4 | 165.6 | 2219 | | 23.5 | 178.0 | 4183 | | 12.7 | 194.9 | 2475 | |
| C. P. 29/320 | 15.8 | 170.4 | 2692 | | 19.3 | 165.1 | 3186 | | 19.9 | 176.9 | 3520 | |
| C. P. 33/243 | | | | | 12.7 | 187.5 | 2381 | | 10.5 | 188.1 | 1975 | |
| C. P. 33/310 | | | | | | | | | 16.1 | 175.0 | 2817 | |
| C. P. 33/425 | | | | | 12.7 | 194.2 | 2466 | | 10.1 | 184.7 | 1865 | |
| C. P. 34/120 | 8.9 | 182.2 | 1622 | | 17.5 | 196.8 | 3444 | | 6.5 | 187.6 | 1219 | |
| C. P. 36/13 | 21.7 | 202.7 | 4399 | | 26.0 | 202.7 | 5270 | | 15.2 | 213.5 | 3245 | |
| C. P. 33/253 | 16.9 | 184.4 | 3116 | | 27.9 | 202.6 | 5653 | | 18.1 | 210.1 | 3803 | |
| C. P. 33/372 | | | | | 25.2 | 176.1 | 4438 | | 14.1 | 171.6 | 2420 | |
| C. P. 34/79 | 20.1 | 179.7 | 3612 | | 19.6 | 211.2 | 4140 | | 10.9 | 200.0 | 2180 | |
| C. P. 35/14 | | | | | | | | | 5.2 | 205.7 | 1070 | |
| C. P. 36/62 | | | | | 13.1 | 197.7 | 2590 | | 5.4 | 197.3 | 1065 | |
| C. P. 37/5 | 15.3 | 189.2 | 2895 | | | | | | | | | |
| C. P. 38/26 | 21.0 | 199.4 | 4187 | | | | | | 22.0 | 194.0 | 4268 | |
| C. P. 42/24 | 17.5 | 170.0 | 2975 | | 21.1 | 173.9 | 3669 | | 3.5 | 186.6 | 653 | |
| C. P. 43/3 | 8.4 | 193.6 | 1626 | | 14.8 | 175.1 | 2591 | | | | | |
| C. P. 43/9 | 14.6 | 169.0 | 2467 | | | | | | | | | |
| C. P. 43/33 | | | | | 25.3 | 185.0 | 4680 | | | | | |
| C. P. 43/47 | 10.2 | 190.0 | 1938 | | 26.3 | 185.6 | 4881 | | | | | |
| C. P. 43/74 | 15.1 | 194.8 | 2941 | | 22.7 | 195.5 | 4438 | | 21.9 | 210.8 | 4617 | |
| C. P. 44/28 | | | | | 8.5 | 186.2 | 1583 | | 1.0 | 170.0 | 170 | |
| C. P. 44/37 | | | | | 7.6 | 209.9 | 1595 | | 1.0 | 186.8 | 187 | |
| C. P. 44/69 | 19.3 | 191.4 | 3694 | | | | | | | | | |
| C. P. 44/101 | 20.9 | 199.6 | 4172 | | | | | | | | | |
| C. P. 44/155 | 14.7 | 218.2 | 3208 | | | | | | | | | |
| F. 36/671 | | | | | 3.3 | | | | 1.8 | 194.6 | 350 | |

[1] Shallow muck over Sharkey clay.
[2] Date of harvest.
[3] Averages are based on 3 determinations.

## Literature Cited


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[2] The authors are indebted to Mr. L. G. Davidson, Associate Chemist, Division of Sugar Plant Investigations, for making juice analyses.


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# SUGAR CANE TEST FIELDS--SEASON OF 1948

*By C. B. Gouaux, Associate Agronomist, Louisiana State University and Agricultural and Mechanical College, Agricultural Experiment Stations, W. G. Taggart, Director.*

In the season of 1948, there was a total of twenty-five sugar cane variety experimental fields at the eight Experiment Station test field locations in the five main areas of the sugar cane belt. The final and complete results of these test fields were obtained during the 1948 sugar cane milling season.

The usual methods of land preparation, cultivation, crop rotation, growing of summer and winter legumes, fertilization and weed control measures, used by cooperators in commercial cane production were the same for the sugar cane variety experimental fields. Harvesting of variety plots were on a similar field basis, using standard plantation practices. The loading and hauling operations were also adjusted to the cooperators routine methods, which in most cases were performed with mechanized loaders and tractors equipped with single and double trailer carts. In this manner, the objective of securing results that are under similar methods of cultivation, harvesting and field conditions as the regular field canes of the various localities was accomplished.

Experiment Station supervision was given to all of the important procedures in connection with the test field work. In the early spring, all of the variety plots of the twenty-five fields were marked with labeled stakes. Observations on germination, suckering, growth and variety characteristics were made throughout the growing season at regular monthly intervals.

The fall season is a very important part of the year in Louisiana commercial sugar cane production. It is the most critical and busy season, involving many intricate problems for sugar cane farmers and processors. They not only have to plant a new cane crop for the next season, but they have to harvest, mill end process and market the standing crop of sugar cane. It is also the most important four months of the year in sugar cane variety test field work. In 1948 new variety fields were planted during the space of four weeks. This work consisted of plot arrangements and measurements, harvesting of seed cane and planting of varieties. All of the new varieties were sampled before grinding, and analytical data secured from small mill tests giving information on maturing qualities.

The main work of harvesting and testing varieties started shortly after the opening of the 1948 grinding season. A total of sixteen first and second stubble experimental fields were harvested and tested during the interval of October 20 to November 15, and the remaining nine plant cane fields during the latter part of the season through January 15, 1949.

All of the harvesting, weighing of plots, and big mill and small mill testing of varieties were under close supervision. The analyses of crusher juices, normal juice calculations and trash determinations were performed by the co-operators personnel and laboratory facilities.

### 1948 Season

January was the coldest month of 1948, with early cold spells, followed by severe freezes in the latter part of the month. There were only a few freezes in February, with the average of the month .2 degrees below normal according to the "Louisiana Climatological Data". The last freezes for the first three

## CINCLARE TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **Fall Plant Cane (Yazoo Soil)** | | | | | | |
| C. P. 43-3 | 16.75 | 12.80 | 76.42 | 40.49 | 171.50 | 6944.04 |
| C. P. 43-47 | 16.60 | 13.02 | 78.43 | 36.53 | 175.02 | 6393.48 |
| C. P. 34-120 | 16.89 | 13.47 | 79.75 | 35.03 | 182.22 | 6383.17 |
| C. P. 37-5 | 16.02 | 12.50 | 78.03 | 37.14 | 166.80 | 6194.95 |
| C. P. 29-320 | 17.14 | 13.82 | 80.63 | 31.95 | 187.92 | 6004.04 |
| C. P. 43-9 | 15.24 | 11.56 | 75.85 | 39.44 | 152.06 | 5997.25 |
| C. P. 36-105 | 16.56 | 13.51 | 81.58 | 32.69 | 182.87 | 5978.02 |
| C. P. 29-120 | 16.21 | 12.56 | 77.48 | 33.77 | 167.76 | 5665.26 |
| C. P. 43-28 | 14.56 | 10.40 | 71.43 | 40.29 | 132.80 | 5350.51 |
| C. P. 36-13* | 16.02 | 12.55 | 78.34 | 24.89 | 167.60 | 4171.56 |
| **Fall Plant Cane (Sharkey Soil)** | | | | | | |
| C. P. 33-224 | 14.93 | 10.62 | 71.13 | 38.38 | 136.74 | 5248.08 |
| C. P. 34-120 | 16.29 | 12.18 | 74.77 | 31.37 | 161.78 | 5075.04 |
| C. P. 43-47 | 15.03 | 10.57 | 70.33 | 33.17 | 152.22 | 5049.14 |
| C. P. 37-5 | 15.13 | 10.83 | 71.58 | 35.65 | 140.41 | 5005.62 |
| C. P. 36-105 | 16.39 | 12.25 | 74.74 | 29.75 | 162.85 | 4844.79 |
| C. P. 43-3 | 14.64 | 9.87 | 67.42 | 36.58 | 123.23 | 4507.75 |
| C. P. 43-9 | 14.35 | 9.84 | 68.57 | 34.51 | 122.66 | 4233.00 |
| C. P. 36-13 | 14.54 | 10.25 | 70.50 | 31.10 | 130.20 | 4049.22 |
| C. P. 44-153** | 13.34 | 8.70 | 65.22 | ----- | 101.20 | ------- |
| C. P. 44-155** | 15.12 | 10.96 | 72.49 | ----- | 142.68 | ------- |
| **First Stubble (Yazoo Soil)** | | | | | | |
| C. P. 43-28 | 16.18 | 12.72 | 78.62 | 30.62 | 170.30 | 5214.59 |
| C. P. 43-47 | 16.79 | 13.22 | 78.74 | 25.99 | 178.22 | 4631.94 |
| C. P. 43-33 | 16.79 | 12.93 | 77.01 | 26.17 | 173.58 | 4542.59 |
| C. P. 37-5 | 16.73 | 13.15 | 78.60 | 22.91 | 177.10 | 4057.36 |
| C. P. 29-120 | 16.82 | 12.96 | 77.05 | 22.51 | 174.06 | 3918.09 |
| C. P. 29-320 | 16.99 | 13.83 | 81.40 | 20.71 | 188.08 | 3895.14 |
| C. P. 43-9 | 16.02 | 12.51 | 78.09 | 22.10 | 166.96 | 3689.82 |
| C. P. 36-105 | 17.50 | 14.09 | 80.51 | 19.12 | 192.24 | 3675.63 |
| C. P. 34-120 | 16.56 | 12.49 | 75.42 | 18.69 | 166.64 | 3114.50 |
| F. 36-819 | 17.38 | 14.15 | 81.42 | 15.55 | 193.25 | 3005.04 |
| C. P. 43-3 | 16.12 | 11.97 | 74.26 | 17.42 | 158.42 | 2759.68 |
| C. P. 36-13 | 15.35 | 11.57 | 75.42 | 16.65 | 152.22 | 2534.46 |
| **First Stubble (Sharkey Soil)** | | | | | | |
| C. P. 33-224 | 15.79 | 11.64 | 73.72 | 22.57 | 153.30 | 3459.98 |
| C. P. 34-120 | 17.75 | 13.15 | 74.08 | 19.23 | 177.10 | 3405.63 |
| C. P. 36-105 | 17.75 | 13.15 | 74.08 | 13.04 | 177.10 | 2309.38 |
| C. P. 36-13 | 15.99 | 11.64 | 72.80 | 14.53 | 153.30 | 2227.45 |
| **Second Stubble (Yazoo Soil)** | | | | | | |
| C. P. 29-320 | 17.63 | 14.28 | 81.00 | 16.27 | 195.38 | 3178.83 |
| C. P. 36-105 | 17.57 | 13.75 | 78.26 | 16.96 | 186.80 | 3168.13 |
| C. P. 36-183 | 15.79 | 12.34 | 78.15 | 18.83 | 164.24 | 3092.64 |
| C. P. 29-120 | 16.73 | 13.12 | 78.42 | 17.37 | 176.62 | 3067.89 |
| C. P. 36-13 | 15.75 | 12.34 | 78.35 | 16.37 | 164.24 | 2688.61 |
| C. P. 34-120 | 16.50 | 12.89 | 78.12 | 7.74 | 172.94 | 1338.56 |

* Poor Stand Condition. ** Small Mill Tests, calculated to Normal Juice.

## CINCLARE TEST FIELD

**Fall Plant Cane (Yazoo and Sharkey Soils):** Planted September 24-25, 1947 The varieties in the Yazoo field were cut by hand and stripped, while those of the Sharkey field were cut by hand, top and bottom and burned. The two fields were harvested, loaded, weighed and tested (big mill tests) at Cinclare Central Factory, November 22-24, 1948. On the Sharkey soil, the buds of the cane were badly damaged by frost and a low temperature of 32 degrees F., which occurred October 17-18. Buds and leaves of C. P. Nos. 33-224, 36-13 and 43-9 showed more cold damage than the other varieties.

Three unreleased varieties, C. P. Nos. 43-3, 43-47 and 37-5, gave excellent response as plant cane on Yazoo soil; while C. P. 34-120 and C. P. 29-320 were the two highest commercial canes. The poor showing made by C. P. 36-13 was due to a bad stand condition.

On the Sharkey soil plant cane field, C. P. 33-224 ranked first, followed by C. P. 34-120, C. P. 43-47 and C. P. 37-5.

**First Stubble (Yazoo and Sharkey soils):** Planted September 20, 1946. Harvesting dates: November 20, 1947 and October 26-27, 1948. All varieties cut by hand, top and bottom and burned. Weights and big mill tests at Cinclare Central Factory, October 28, 1948. Buds and leaves of C. P. Nos. 36-13 and 33-224, showed more cold damage than C. P. Nos. 34-120 and 36-105 on Sharkey soil.

Four unreleased varieties outranked, C. P. Nos. 29-120 and 29-320, as first stubble on Yazoo soil, C. P. 43-28, which ranked first, lodges badly and showed low sucrose as plant cane.

In the Sharkey soil first stubble tests, C. P. 33-224 outranked C. P. 34-120; while C. P. Nos. 36-105 and 36-13 ranked third and fourth respectively.

**Second Stubble (Yazoo Soil):** Planted September 18, 1945. Harvesting Dates: November 18, 1946, October 28, 1947 and October 29, 1948. Harvested by hand, top and bottom, and burned. Weights and big mill tests at Cinclare Central Factory, Oct. 29, 1948.

C. P. 36-105 was the highest ranking second stubble variety on Yazoo soil for the past three seasons. In the 1948 results, it was outranked by C. P. 29-320; while C. P. Nos. 36-183 and 29-120 ranked third and fourth respectively.

## GLENWOOD TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **Fall Plant Cane (Yazoo Soil)** | | | | | | |
| C. P. 44-101 | 16.52 | 12.81 | 77.54 | 36.05 | 171.66 | 6188.34 |
| C. P. 36-13 | 16.36 | 12.94 | 79.10 | 34.54 | 173.74 | 6000.98 |
| C. P. 44-69 | 15.41 | 12.05 | 78.20 | 33.42 | 159.70 | 5337.17 |
| C. P. 44-155 | 16.64 | 11.66 | 70.07 | 34.49 | 153.60 | 5297.66 |
| C. P. 37-5 | 15.74 | 11.93 | 75.79 | 32.98 | 157.78 | 5203.58 |
| C. P. 34-120 | 16.08 | 12.32 | 76.62 | 30.91 | 163.92 | 5066.77 |
| C. P. 43-9 | 14.98 | 12.00 | 80.11 | 31.80 | 158.90 | 5053.02 |
| C. P. 29-120 | 16.08 | 12.37 | 76.93 | 28.84 | 164.72 | 4750.52 |
| C. P. 36-105 | 16.76 | 12.76 | 76.13 | 27.79 | 170.90 | 4749.31 |
| C. P. 43-3 | 15.78 | 11.72 | 74.27 | 29.64 | 154.52 | 4579.97 |
| C. P. 43-47 | 16.85 | 13.29 | 78.87 | 19.80 | 179.34 | 3550.93 |
| C. P. 44-153 | 16.84 | 12.87 | 76.43 | ----- | 172.62 | ------- |

## GLENWOOD TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **First Stubble (Yazoo Soil)** | | | | | | |
| C. P. 43-47 | 16.10 | 12.18 | 75.65 | 32.49 | 161.78 | 5256.23 |
| C. P. 37-5 | 16.14 | 12.64 | 78.31 | 30.63 | 169.04 | 5177.70 |
| C. P. 43-3 | 15.37 | 11.03 | 71.76 | 34.51 | 143.85 | 4964.26 |
| C. P. 43-9 | 14.85 | 11.10 | 74.75 | 31.71 | 144.90 | 4594.78 |
| C. P. 36-105 | 16.69 | 12.62 | 75.61 | 26.56 | 168.72 | 4481.20 |
| C. P. 29-120 | 15.81 | 11.94 | 75.52 | 27.20 | 157.94 | 4295.97 |
| C. P. 36-197 | 15.66 | 12.00 | 76.63 | 26.64 | 158.90 | 4233.10 |
| C. P. 36-13 | 15.75 | 11.80 | 74.92 | 25.46 | 155.80 | 3966.67 |
| C. P. 36-183 | 13.99 | 9.95 | 71.12 | 31.05 | 124.80 | 3875.04 |
| C. P. 34-120 | 15.08 | 11.05 | 73.28 | 26.52 | 144.15 | 3822.86 |
| C. P. 36-19 | 15.72 | 11.51 | 73.22 | 23.68 | 151.26 | 3581.84 |
| C. P. 36-203 | 17.06 | 12.58 | 73.74 | 19.39 | 168.08 | 3259.07 |
| F. 36-671 | 17.17 | 13.34 | 77.69 | 17.59 | 180.14 | 3168.66 |
| F. 36-819 | 15.25 | 10.93 | 71.67 | 18.62 | 142.14 | 2646.65 |
| **Second Stubble (Yazoo Soil)** | | | | | | |
| C. P. 43-28 | 16.45 | 12.27 | 74.56 | 40.20 | 163.15 | 6568.53 |
| C. P. 43-33 | 16.93 | 12.78 | 75.49 | 25.18 | 171.20 | 4310.82 |
| C. P. 37-5 | 15.95 | 11.99 | 75.17 | 25.91 | 158.74 | 4112.95 |
| C. P. 36-183 | 15.40 | 11.83 | 76.82 | 25.85 | 156.25 | 4039.06 |
| C. P. 43-9 | 15.62 | 11.86 | 75.93 | 23.49 | 156.70 | 3680.88 |
| C. P. 36-13 | 15.97 | 11.93 | 74.70 | 22.76 | 157.78 | 3591.07 |
| C. P. 34-120 | 15.56 | 11.28 | 72.49 | 23.67 | 147.70 | 3496.06 |
| C. P. 36-105 | 16.91 | 12.58 | 74.39 | 20.03 | 168.08 | 3366.64 |
| C. P. 29-320 | 16.93 | 13.19 | 77.91 | 18.55 | 177.74 | 3297.08 |
| C. P. 29-120 | 16.33 | 12.74 | 78.03 | 18.55 | 170.60 | 3164.63 |
| C. P. 43-49 | 16.93 | 13.09 | 77.32 | 17.68 | 176.14 | 3114.16 |
| F. 36-819 | 15.88 | 12.34 | 77.71 | 15.73 | 164.24 | 2583.50 |
| C. P. 43-3 | 16.91 | 12.17 | 71.97 | 15.98 | 161.62 | 2582.69 |

**Fall Plant Cane (Yazoo Soil):** Planted September 26, 1947. Harvested by hand, top and bottom, and burned November 29 to December 1. Loaded, weighed and tested at Glenwood Factory December 2, 1948.

The promising unreleased C. P. 44-101 variety ranked first, followed closely by C. P. 36-13. Three unreleased varieties, C. P. Nos. 44-69, 44-155 and 37-5 outranked C. P. 34-120; while C. P. 43-9 showed up better than C. P. Nos. 29-120 and 36-105.

**First Stubble (Yazoo Soil):** Planted October 3, 1946. Harvesting dates: November 29, 1947 and October 27, 1948. This field was burned accidentally from a headland fire on October 26, and was harvested by hand on the next day. Loaded, weighed and tested at Glenwood Factory October 29, 1948.

Four unreleased varieties, C. P. Nos. 43-47, 37-5, 43-3 and 43-9 outranked C. P. Nos. 36-105 and 29-120.

C. P. 36-197, another unreleased variety, which has proved undesirable from a field standpoint on account of its severe lodging, was ahead of C. P. 36-13.

In the six field canes on trial as first stubble, C. P. 36-19 made the poorest showing; besides being outclassed to a considerable extent by five unreleased varieties.

**Second Stubble (Yazoo Soil):** Planted October 4, 1945. Harvesting dates: November 21, 1946, November 15, 1947 and October 27, 1948. Loaded, weighed and tested at Glenwood Factory October 30 1948.

Three unreleased canes, C. P. Nos. 43-28, 43-33 and 37-5, showed better performance than C. P. 36-183, which was tne highest ranking commercial cane; while C. P. 43-9 outranked C. P. Nos. 36-13 and 34-120.

In the new varieties at Glenwood, C. P. 37-5 showed very good performance as first and second stubble and ranked fifth in the plant cane tests.

## RESERVE TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **Fall Plant Cane (Yazoo Soil)** | | | | | | |
| C. P. 44-101 | 15.45 | 11.95 | 77.35 | 47.14 | 158.10 | 7452.83 |
| C. P. 34-120 | 15.29 | 11.63 | 76.06 | 41.87 | 153.15 | 6412.39 |
| C. P. 43-3 | 15.48 | 11.77 | 76.03 | 39.73 | 155.32 | 6170.86 |
| C. P. 37-5 | 16.87 | 13.00 | 77.06 | 34.77 | 174.70 | 6074.32 |
| C. P. 43-47 | 15.57 | 12.37 | 79.13 | 37.01 | 163.92 | 6066.68 |
| C. P. 36-105 | 16.23 | 12.78 | 78.74 | 34.40 | 171.20 | 5889.28 |
| C. P. 44-155 | 14.14 | 11.04 | 78.08 | 40.71 | 144.00 | 5862.24 |
| C.* 43-9 | 13.03 | 9.64 | 73.98 | 46.50 | 118.76 | 5522.34 |
| C. P. 36-13 | 15.89 | 12.51 | 78.71 | 31.12 | 166.96 | 5195.80 |
| C. P. 44-153 | 10.50 | 7.66 | 72.95 | 51.59 | 84.16 | 4341.81 |
| C. P. 29-120 | 16.36 | 12.76 | 78.00 | 23.31 | 170.90 | 3983.68 |
| C. P. 44-51 | 12.29 | 9.40 | 76.48 | 20.85 | 114.00 | 2376.80 |
| **First Stubble (Yazoo Soil)** | | | | | | |
| C. P. 43-47 | 16.97 | 13.65 | 80.44 | 29.24 | 185.20 | 5415.25 |
| C. P. 36-183 | 16.88 | 13.41 | 79.44 | 29.14 | 181.26 | 5281.92 |
| C. *. 43-9 | 16.47 | 12.55 | 76.20 | 31.43 | 167.60 | 5267.67 |
| C. P. 36-105 | 17.13 | 13.37 | 78.05 | 28.92 | 180.62 | 5223.53 |
| C. P. 34-120 | 16.27 | 12.34 | 75.85 | 30.03 | 164.24 | 4932.13 |
| C. P. 43-33 | 16.19 | 12.35 | 76.28 | 29.21 | 164.40 | 4802.12 |
| C. P. 36-13 | 17.15 | 12.66 | 73.82 | 27.70 | 169.36 | 4691.27 |
| C. P. 43-3 | 15.49 | 11.72 | 75.66 | 26.26 | 154.52 | 4057.70 |
| C. P. 37-5 | 16.37 | 13.17 | 80.45 | 20.09 | 177.42 | 3564.37 |
| C. P. 29-120* | ----- | 12.77 | ----- | 19.89 | 171.05 | 3402.18 |
| C. P. 43-32 | 16.00 | 12.45 | 77.81 | 19.13 | 166.00 | 3175.58 |
| C. P. 36-203 | 16.10 | 12.22 | 75.90 | 16.82 | 162.40 | 2731.57 |
| C. P. 36-19 | 16.24 | 12.72 | 78.45 | 14.96 | 170.64 | 2552.77 |
| C. P. 36-197 | 16.96 | 13.72 | 80.90 | 11.37 | 186.32 | 2118.46 |
| **Second Stubble (Yazoo Soil)** | | | | | | |
| C. P. 36-183 | 16.57 | 13.06 | 78.82 | 27.24 | 175.66 | 4784.98 |
| C. P. 29-320 | 17.16 | 13.81 | 80.48 | 23.83 | 187.76 | 4474.32 |
| C. P. 34-120 | 15.95 | 11.24 | 70.47 | 28.58 | 147.10 | 4204.12 |
| C. P. 36-13 | 16.23 | 12.56 | 77.39 | 22.07 | 167.76 | 3702.46 |
| C. P. 36-105 | 16.03 | 12.46 | 77.73 | 21.45 | 166.16 | 3564.13 |
| C. P. 29-120 | 16.76 | 13.63 | 81.32 | 17.01 | 184.88 | 3144.81 |
| F. 36-819 | 16.19 | 12.40 | 76.59 | 18.22 | 165.20 | 3009.94 |
| C. P. 43-3 | 16.47 | 12.54 | 76.14 | 15.71 | 167.44 | 2630.48 |
| F. 36-671 | 16.97 | 13.55 | 79.85 | 13.64 | 183.55 | 2503.62 |
| C. P. 43-47 | 16.58 | 12.08 | 72.86 | 14.05 | 160.18 | 2250.53 |

* Muddy Crusher Juice Sample.

## RESERVE TEST FIELD

**Fall Plant Cane (Yazoo Soil):** Planted October 1, 1947. This field was harvested by hand, top and bottom without stripping December 6-8. On account of 1.26 inches of rain the heaps were not burned. The variety plots were loaded, weighted and tested at Reserve Factory December 8, 1948. Trash determinations and weight corrections were made on all varieties.

**Corrections and juice anlayses were made as follows:** Crusher Juice Brix X Factor (102-110) divided by 97.50 (Dry Milling Brix Factor) equals Normal Juice Brix. Normal Juice Brix times Normal Juice Purity equals Normal Juice Sucrose.

All varieties were badly damaged by cane borers, especially the middle and upper portions of the stalks. C. P. Nos. 29-120, 36-13, 44-153 and 37-5 showed worst borer damage.

**Treatment of field:** In the summer when the land was prepared, an application of five tons of compost per acre (.5% nitrogen) equivalent to fifty pounds of nitrogen per acre was made. In the spring the cane was fertilized with an application of twenty pounds of nitrogen per acre in the form of Aqua Ammonia. Ditch banks were chlorated in the fall of 1947, after the cane had germinated. The following variety plots were on the chlorinated ditch banks: C. P. Nos. 43-47, 34-120, 45-184, 43-9, 44-51 and 44-101.

C. P. 44-101 ranked first, followed by C. P. 34-120. Three unreleased varieties, C. P. Nos. 43-3, 37-5 and 43-47 outranked C. P. 36-105; while C. P. Nos. 43-9 and 44-155 showed up better than C. P. 36-13.

**First Stubble (Yazoo Soil):** Planted October 4, 1946. Harvested as plant cane December 2, 1947. First stubble cut by hand, top and bottom and burned November 2-3. Loaded, weighed and tested at Reserve Factory November 4, 1948.

C. P. 43-47 was the leading variety, followed by C. P. 36-183.

C. P. 43-9 outranked C. P. Nos. 36-105 and 34-120; while C. P. 43-33 was ahead of C. P. 36-13.

C. P. 36-19 made the poorest showing of the commercial canes, being outranked by five varieties.

**Second Stubble (Yazoo Soil):** Planted September 26, 1945. Harvesting dates: December 2, 1946, November 15, 1947 and November 3, 1948. All varieties were cut by hand, top and bottom and burned; followed by loading, weighing and testing at Reserve Factory November 4, 1948.

## MEEKER TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| Fall Plant Cane (Yahola Very Fine Sandy Loam) | | | | | | |
| C. P. 44-101 | 16.77 | 12.58 | 75.01 | 30.14 | 168.08 | 5065.93 |
| C. P. 29-320 | 17.55 | 13.72 | 78.18 | 26.03 | 186.32 | 4849.91 |
| C. P. 43-3 | 16.58 | 11.86 | 71.53 | 30.04 | 156.70 | 4707.27 |
| C. P. 36-13 | 16.68 | 13.23 | 79.32 | 25.84 | 178.38 | 4609.34 |
| C. P. 36-105 | 16.97 | 12.66 | 74.60 | 25.61 | 169.36 | 4337.31 |
| C. P. 43-47 | 17.26 | 13.01 | 75.38 | 21.83 | 174.86 | 3817.19 |
| C. P. 43-9 | 15.41 | 11.11 | 72.10 | 24.06 | 145.06 | 3490.14 |
| C. P. 44-152 | 15.85 | 11.07 | 69.74 | 23.11 | 144.45 | 3338.24 |
| C. P. 37-5 | 15.31 | 10.82 | 70.67 | 23.01 | 140.24 | 3226.92 |
| C. P. 34-120 | 15.80 | 11.56 | 73.16 | 19.84 | 152.06 | 3016.87 |
| C. P. 36-19 | 16.28 | 12.05 | 74.02 | 15.65 | 159.70 | 2499.31 |

## MEEKER TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| First Stubble (Yahola Very Fine Sandy Loam) | | | | | | |
| C. P. 36-13 | 15.21 | 11.41 | 75.02 | 24.65 | 149.75 | 3691.34 |
| C. P. 36-183 | 14.29 | 10.58 | 74.04 | 25.82 | 136.04 | 3512.55 |
| C. P. 36-105 | 15.76 | 11.63 | 73.79 | 20.61 | 153.15 | 3156.42 |
| C. P. 29-320 | 15.67 | 11.98 | 76.45 | 18.70 | 158.58 | 2965.45 |
| C. P. 43-3 | 13.36 | 8.73 | 65.34 | 27.37 | 101.71 | 2783.80 |
| C. P. 34-120 | 14.65 | 10.98 | 74.95 | 19.12 | 143.04 | 2734.92 |
| C. P. 43-47 | 14.28 | 10.37 | 72.62 | 19.42 | 132.29 | 2569.07 |
| C. P. 43-28 | 13.64 | 9.67 | 70.89 | 19.81 | 119.33 | 2363.93 |
| C. P. 36-19 | 15.12 | 11.02 | 72.88 | 14.93 | 143.70 | 2145.44 |
| C. P. 43-9 | 13.73 | 9.68 | 70.50 | 17.22 | 119.52 | 2058.13 |
| C. P. 37-5 | 14.47 | 10.81 | 74.71 | 10.88 | 140.07 | 1523.96 |
| C. P. 44-155 | 16.04 | 12.39 | 77.24 | ----- | 165.04 | ------- |
| Second Stubble (Yahola Very Fine Sandy Loam) | | | | | | |
| C. P. 36-13 | 15.67 | 11.24 | 71.73 | 27.56 | 147.10 | 4054.08 |
| C. P. 36-183 | 14.29 | 9.96 | 69.70 | 29.71 | 125.00 | 3713.75 |
| C. P. 43-3 | 14.75 | 9.56 | 64.81 | 31.11 | 117.20 | 3646.09 |
| C. P. 43-33 | 15.95 | 10.99 | 68.90 | 24.45 | 143.22 | 3501.73 |
| C. P. 36-105 | 16.41 | 12.01 | 73.19 | 20.00 | 159.06 | 3181.20 |
| C. P. 43-9 | 14.56 | 10.09 | 69.30 | 23.80 | 127.42 | 3032.60 |
| C. P. 29-320 | 15.58 | 11.11 | 71.31 | 20.83 | 145.06 | 3021.60 |
| C. P. 43-47 | 16.04 | 11.93 | 74.38 | 15.37 | 157.78 | 2425.08 |
| C. P. 33-243 | 15.58 | 11.50 | 73.81 | 15.22 | 151.10 | 2299.74 |
| C. P. 36-197 | 15.21 | 10.93 | 71.86 | 15.29 | 142.14 | 2173.32 |
| C. P. 36-19 | 16.04 | 11.30 | 70.45 | 12.64 | 148.00 | 1870.72 |
| C. P. 34-120 | 15.58 | 10.60 | 68.04 | 12.83 | 136.40 | 1750.01 |
| C. P. 37-5 | 14.85 | 10.39 | 69.97 | 6.44 | 132.63 | 854.14 |

**Fall Plant Cane (Yahola very fine sandy loam):** Planted October 8 1947. Machine cut and burned December 1-2. Loaded, weighed and tested at Meeker Factory, December 3, 1948.

C. P. 44-101, promising unreleased variety, made the best showing with good sucrose and highest tonnage; while C. P. 29-320 ranked second. C. P. 43-3, third ranking variety, showed higher field yield than C. P. Nos. 36-13 and 36-105, but was considerably lower from a sucrose standpoint.

**First Stubble (Yahola very fine sandy loam):** Planted October 8, 1946. Harvesting dates; November 25, 1947 and October 24-25, 1948. All varieties were cut with mechanical harvester, followed by burning, loading, weighing and testing at Meeker Factory.

C. P. 36-13 showed the best performance, followed by C. P. 36-183. However, both C. P. 36-105 and C. P. 29-320, the two next best varieties, are more desirable canes than C P. 36-183, being higher in sucrose and better for the mechanical harvesters.

Three unreleased varieties, C. P. Nos. 43-3, 43-9 and 43-28 gave very low sucrose tests.

**Second Stubble (Yahola very fine sandy loam):** Planted October 2, 1945. Harvesting dates: December 2, 1946, November 3, 1947 and October 23, 1948. All varieties were machine cut and burned, followed by loading, weighing and testing at Meeker Factory October 23-25, 1948.

C. P. 36-13 and 36-183, ranked first and second respectively in the second stubble tests, C. P. 36-183 was again low in sucrose. Three unreleased varieties, C. P. Nos. 43-3, 43-9 and 43-33, which had favorable ratings in sugar per acre yields, were lower in their sucrose tests than the standard field canes, C. P. 36-105 and C. P. 29-320. C. P. 36-19, which was released in 1946, made a very poor showing as plant cane, first and second stubble.

## SHIRLEY TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **Fall Plant Cane (Yahola Very Fine Sandy Loam)** | | | | | | |
| C. P. 36-13 | 16.32 | 13.15 | 80.58 | 29.20 | 177.10 | 5171.32 |
| C. P. 44-101 | 15.02 | 11.00 | 73.24 | 33.94 | 143.40 | 4867.00 |
| C. P. 29-320 | 16.41 | 13.33 | 81.23 | 27.04 | 179.98 | 4866.66 |
| C. P. 36-105 | 16.13 | 11.88 | 73.65 | 29.20 | 157.00 | 4584.40 |
| C. P. 43-3 | 14.84 | 10.79 | 72.71 | 31.69 | 139.72 | 4427.73 |
| C. P. 37-5 | 14.38 | 10.40 | 72.32 | 31.28 | 132.80 | 4153.98 |
| C. P. 43-47 | 15.49 | 11.55 | 74.56 | 27.87 | 151.90 | 4233.45 |
| C. P. 34-120 | 16.13 | 11.99 | 74.33 | 25.12 | 158.74 | 3987.55 |
| C. P. 44-153 | 15.12 | 9.85 | 65.15 | 28.45 | 122.85 | 3495.08 |
| C. P. 43-9 | 14.38 | 10.37 | 72.11 | 19.80 | 132.29 | 2619.34 |
| C. P. 44-155 | 14.29 | 10.24 | 71.66 | 19.22 | 130.02 | 2498.98 |
| **First Stubble (Yahola Very Fine Sandy Loam)** | | | | | | |
| C. P. 43-3 | 15.30 | 11.36 | 74.25 | 34.19 | 148.96 | 5092.94 |
| C. P. 43-9 | 14.75 | 10.79 | 73.15 | 36.35 | 139.72 | 5078.82 |
| C. P. 43-33 | 16.59 | 12.43 | 74.92 | 29.86 | 165.68 | 4947.20 |
| C. P. 34-120 | 16.32 | 12.68 | 77.70 | 27.65 | 169.68 | 4691.65 |
| C. P. 36-197 | 17.05 | 13.84 | 81.17 | 22.70 | 188.24 | 4273.05 |
| C. P. 36-105 | 16.13 | 12.12 | 75.14 | 26.37 | 160.82 | 4240.82 |
| C. P. 43-47 | 15.95 | 11.95 | 74.92 | 25.88 | 158.10 | 4091.63 |
| C. P. 29-320 | 16.78 | 13.13 | 78.25 | 22.70 | 176.78 | 4012.91 |
| C. P. 36-13 | 15.76 | 12.12 | 76.90 | 24.91 | 160.82 | 4006.03 |
| F. 36-819 | 15.85 | 12.41 | 78.30 | 23.63 | 165.36 | 3907.46 |
| C. P. 44-101 | 16.13 | 11.95 | 74.09 | ----- | 158.10 | ------- |
| C. P. 44-153 | 16.13 | 11.16 | 69.19 | ----- | 145.86 | ------- |
| C. P. 44-155 | 16.59 | 13.06 | 78.72 | ----- | 175.66 | ------- |
| **Second Stubble (Very Fine Sandy Loam)** | | | | | | |
| C. P. 36-105 | 17.42 | 14.01 | 80.42 | 30.92 | 190.96 | 5904.48 |
| C. P. 34-120 | 17.42 | 14.07 | 80.77 | 29.15 | 191.92 | 5594.47 |
| C. P. 43-3 | 16.96 | 13.78 | 81.25 | 29.19 | 187.28 | 5466.70 |
| C. P. 29-320 | 17.42 | 14.59 | 83.75 | 26.62 | 200.53 | 5338.11 |
| C. P. 36-183 | 16.96 | 13.45 | 79.30 | 26.95 | 181.90 | 4902.21 |
| C. P. 43-47 | 16.41 | 12.64 | 77.03 | 27.48 | 169.04 | 4645.22 |
| C. P. 43-9 | 14.93 | 11.22 | 75.15 | 30.20 | 146.80 | 4433.36 |
| C. P. 36-13 | 16.13 | 11.82 | 73.28 | 28.00 | 156.10 | 4370.80 |
| C. P. 43-33 | 16.68 | 12.55 | 75.24 | 24.33 | 167.60 | 4077.31 |
| C. P. 43-28 | 14.29 | 10.43 | 72.99 | 22.21 | 133.34 | 2961.48 |

**Fall Plant Cane (Yahola very fine sandy loam):** Planted October 9-10, 1947. All varieties were machine cut and burned November 9, 1948. Samples of ten stalks of each variety were taken from loads at the scale. Small mill tests and juice analyses were made in the laboratory of the Meeker Sugar Cooperative Inc.

C. P. 36-13 ranked first, followed by the promising unreleased variety C. P. 44-101. C. P. Nos. 29-320 and 36-105 ranked third and fourth respectively; while the former showed the highest sucrose test.

Six out of the seven unreleased varieties showed comparatively low sucroses; while C. P. 43-47 was lower in sugar per ton yield but higher in sugar per acre yield.

**First Stubble (Yahola very fine sandy loam):** Planted September 23, 1946. Harvesting dates: November 25, 1947 and November 8, 1948, All varieties were cut by hand and not burned. Trash determinations and weight corrections were made on all varieties All varieties were loaded, weighed and samples of ten stalks of each variety were taken at the Shirley scale. Small mill tests and juice analyses were made in the laboratory of the Meeker Sugar Cooperative Inc.

In the class of unreleased varieties, C. P. Nos. 43-33 and 43-47 were the most promising. C. P. Nos. 43-3 and 43-9 both gave high tonnages, but were low from a sucrose standpoint. C. P. 36-197 which had the highest sucrose test, was very badly lodged.

C. P. Nos. 34-120, 36-105 and 29-320 were the three highest ranking commercial canes; with C. P. 29-320 showing highest sucrose content.

**Second Stubble (Yahola very fine sandy loam):** Planted September 21, 1945. Harvesting dates: November 27, 1946, November 5, 1947 and November 8, 1948. All varieties machine cut and burned with "Woolery Weed Burner". All varieties were loaded, weighed and samples of ten stalks taken at the Shirley scale. Small mill tests and juice analyses were made in the laboratory of the Meeker Sugar Cooperative Inc.

C. P. Nos. 36-105 and 34-120 were the two highest ranking varieties, while C. P. 43-3 ranked third and C. P. 29-320 fourth.

## CAFFERY TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **Fall Plant Cane (Baldwin Clay Loam)** | | | | | | |
| C. P. 44-101 | 16.79 | 13.94 | 83.03 | 35.30 | 189.84 | 6701.35 |
| C. P. 36-183 | 17.56 | 14.95 | 85.14 | 27.69 | 206.30 | 5712.45 |
| C. P. 43-47 | 16.79 | 13.37 | 79.63 | 31.14 | 180.62 | 5624.51 |
| C. P. 44-155 | 17.66 | 14.85 | 84.09 | 25.76 | 204.65 | 5271.78 |
| C. P. 36-13 | 17.27 | 14.66 | 84.89 | 26.08 | 201.56 | 5256.68 |
| C. P. 43-9 | 15.92 | 12.28 | 77.14 | 31.54 | 163.30 | 5150.48 |
| F. 31-762 | 16.69 | 13.68 | 81.97 | 27.60 | 185.68 | 5124.77 |
| C. P. 43-28 | 16.69 | 13.73 | 82.26 | 27.09 | 186.48 | 5051.74 |
| C. P. 36-105 | 17.08 | 13.82 | 80.91 | 25.97 | 187.92 | 4880.28 |
| C. P. 37-5 | 16.60 | 13.80 | 83.13 | 25.70 | 187.60 | 4821.32 |
| Co. 290 | 15.63 | 11.78 | 75.37 | 28.67 | 155.48 | 4457.61 |
| C. P. 34-120 | 16.89 | 13.76 | 81.47 | 23.66 | 186.96 | 4423.47 |
| C. P. 43-3 | 16.60 | 13.10 | 78.92 | 21.25 | 176.30 | 3746.38 |
| C. P. 44-153 | 14.48 | 9.96 | 68.78 | 26.01 | 125.00 | 3251.25 |
| **First Stubble (Baldwin Clay Loam)** | | | | | | |
| C. P. 34-120 | 14.63 | 12.00 | 82.02 | 30.54 | 158.90 | 4852.81 |
| F. 31-762 | 15.46 | 11.73 | 75.87 | 29.42 | 154.68 | 4550.69 |
| C. P. 36-105 | 15.55 | 12.02 | 77.30 | 27.62 | 159.22 | 4397.66 |
| C. P. 36-183 | 15.36 | 11.81 | 76.89 | 26.05 | 155.95 | 4062.50 |
| C. P. 43-47 | 13.52 | 10.95 | 80.99 | 28.30 | 142.50 | 4032.75 |
| C. P. 36-13 | 15.18 | 12.19 | 80.30 | 23.35 | 161.94 | 3781.30 |
| Co. 290 | 13.98 | 10.49 | 75.04 | 26.05 | 134.42 | 3501.64 |
| **Second Stubble (Baldwin Clay Loam)** | | | | | | |
| F. 31-762 | 14.54 | 10.95 | 75.31 | 28.51 | 142.50 | 4062.68 |
| C. P. 36-183 | 15.92 | 12.58 | 79.02 | 22.83 | 168.08 | 3837.27 |
| C. P. 36-105 | 15.73 | 12.13 | 77.11 | 23.07 | 160.98 | 3713.81 |
| C. P. 34-120 | 15.09 | 11.60 | 76.87 | 22.42 | 152.70 | 3423.53 |
| C. P. 36-13 | 14.54 | 11.40 | 78.40 | 21.91 | 149.60 | 3277.74 |
| C. P. 29-116 | 13.98 | 10.18 | 72.82 | 23.07 | 128.96 | 2975.11 |
| Co. 290 | 13.52 | 9.75 | 72.12 | 23.79 | 120.90 | 2876.21 |

## CAFFERY TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **Third Stubble (Baldwin Clay Loam)** | | | | | | |
| C. P. 36-105 | 16.01 | 12.45 | 77.76 | 21.94 | 166.00 | 3642.04 |
| C. P. 34-120 | 14.81 | 11.54 | 77.92 | 23.11 | 151.74 | 3506.71 |
| C. P. 36-183 | 15.64 | 12.19 | 77.94 | 15.76 | 161.94 | 2552.17 |
| C. P. 36-13 | 16.01 | 12.51 | 78.14 | 12.73 | 166.96 | 2125.40 |
| F. 31-762 | 14.90 | 11.23 | 75.37 | 11.22 | 146.95 | 1648.78 |
| Co. 290 | 14.63 | 10.99 | 75.12 | 10.79 | 143.22 | 1545.34 |
| C. P. 29-116 | 13.98 | 9.97 | 71.32 | 11.87 | 125.20 | 1486.12 |

**Fall Plant Cane (Baldwin Clay loam):** Planted October 6, 1947. Harvested by hand, top and bottom, and burned January 14, 1949. All varieties killed by freeze with minimum temperature of 27 degrees F., on December 31, 1948. Loaded, weighed and tested at Columbia Factory January 15, 1949.

C. P. 44-101 ranked first, while C. P. 36-183 and C. P. 36-13 were the two highest ranking commercial canes.

In the unreleased varieties, C. P. 43-47, C. P. 44-155 and F. 31-762 are the most promising.

The standard field cane Co. 290 ranked eleventh out of fourteen varieties in the plant cane tests.

The following varieties milled very poorly at Columbia: C. P. Nos. 34-120, 43-47, 43-3 and 43-9.

**First Stubble (Baldwin clay loam):** Planted September 17, 1946. Harvested December 18, 1947, and November 16, 1948. Two inside rows hand cut and two outside rows machine cut, and trash burned with "Woolery Weed Burner". The varieties were weighed and tested on small mill at Columbia Factory on November 17.

The three highest ranking varieties were in the following order: C. P. 34-120, F. 31-762 and C. P. 36-105.

**Second Stubble (Baldwin clay loam):** Planted September 17, 1945. Harvesting dates: December 28, 1946, November 14, 1947 and November 16, 1948. All varieties cut by hand and burned with "Woolery Weed Burner". Varieties were weighed and tested on small mill at Columbia Factory on November 17.

F. 31-762, C. P. 36-183 and C. P. 36-105 were the three highest ranking varieties.

**Third Stubble (Baldwin clay loam):** Planted October 5, 1944. Harvesting dates: November 10, 1945, November 13, 1946, November 13, 1947 and November 16, 1948. Harvested by hand and burned with "Woolery Weed Burner". Varieties weighed and tested on small mill at Columbia Factory on November 17.

C. P. Nos. 36-105, 34-120 and 36-183 made the best showing; while C. P. 36-13 and F. 31-762 both outranked Co. 290.

## BILLEAUD TEST FIELD

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| **Fall Plant Cane (Lintonia Silt Loam)** | | | | | | |
| Co. 290 | 15.76 | 12.00 | 76.14 | 31.86 | 158.90 | 5062.55 |
| C. P. 36-13 | 15.78 | 12.33 | 78.14 | 29.24 | 164.08 | 4797.70 |
| C. P. 43-9 | 15.58 | 11.91 | 76.44 | 28.16 | 157.46 | 4434.07 |
| C. P. 36-105 | 15.58 | 11.16 | 71.63 | 27.69 | 145.86 | 4038.86 |
| C. P. 37-5 | 14.94 | 12.03 | 80.52 | 23.99 | 159.38 | 3823.63 |
| C. P. 33-310 | 16.58 | 12.55 | 75.69 | 22.99 | 167.60 | 3853.12 |
| C. P. 29-116 | 14.92 | 10.56 | 70.73 | 26.52 | 135.68 | 3598.23 |
| C. P. 43-3 | 15.90 | 11.84 | 74.47 | 22.81 | 156.40 | 3567.48 |
| C. P. 44-69 | 15.78 | 11.77 | 74.59 | 22.34 | 155.32 | 3469.85 |
| C. P. 43-47 | 15.78 | 11.30 | 71.61 | 22.53 | 148.00 | 3334.44 |
| **First Stubble (Lintonia Silt Loam)** | | | | | | |
| C. P. 36-183 | 14.80 | 11.04 | 74.59 | 29.56 | 144.00 | 4256.64 |
| C. P. 36-197 | 17.24 | 13.22 | 76.68 | 21.73 | 178.22 | 3872.72 |
| C. P. 29-116 | 15.29 | 10.30 | 67.36 | 29.40 | 131.10 | 3854.34 |
| C. P. 36-105 | 16.56 | 11.82 | 71.38 | 24.63 | 156.10 | 3844.74 |
| C. P. 43-47 | 16.56 | 11.99 | 72.40 | 22.58 | 158.74 | 3584.35 |
| C. P. 43-28 | 14.31 | 9.13 | 63.80 | 30.06 | 108.77 | 3269.33 |
| C. P. 33-310 | 16.75 | 11.73 | 70.03 | 20.20 | 154.68 | 3124.54 |
| C. P. 34-120 | 16.75 | 12.26 | 73.19 | 15.63 | 163.00 | 2547.69 |
| Co. 290 | 14.51 | 9.54 | 65.75 | 20.10 | 116.80 | 2347.68 |
| C. P. 36-13 | 15.78 | 11.45 | 72.56 | 15.56 | 150.35 | 2339.45 |
| C. P. 37-5 | 16.75 | 11.85 | 70.75 | 12.06 | 156.55 | 1887.99 |
| F. 36-819 | 16.56 | 12.67 | 76.51 | 11.13 | 169.52 | 1886.76 |

**Fall Plant Cane (Lintonia silt loam):** Planted September 15, 1947. Harvested November 25, by hand without stripping and no burning. Heavy rain night of November 25-26 (4.42 inches); and on November 26 it was cloudy, very windy and another rain of 1.04 inches in the afternoon. The varieties were loaded, weighed and juice analyses from both the small mill and big mill were made at the Billeaud Factory laboratory. Trash determinations and weight corrections were made on all varieties.

Corrections of juice analyses were made as follows: Crusher Juice Brix X Factor (104-110) divided by 97.00 (Dry Milling Factor) equals Normal Juice Brix. Normal Juice Brix X Normal Juice Purity equals Normal Juice Sucrose.

Co. 290 ranked first followed by C. P. 36-13. C. P. 43-9 outranked C. P. 36-105; while C. P. 37-5 showed up better than C. P. 33-310 and C. P. 29-116.

**First Stubble (Lintonia silt loam):** Planted September 25, 1946. Harvesting dates: November 29, 1947 and October 20, 1948. All varieties were cut by hand and burned October 20-21; followed by weighing and big mill tests at the Billeaud Factory Oct. 22, 1948.

The first four highest ranking varieties were as follows: C. P. Nos. 36-183, 36-197, 29-116 and 36-105.

C. P. 36-197 which is a small diameter cane, was very crooked and uneconomical from a harvesting standpoint.

Co. 290 the standard field cane ranked ninth and was very low in sucrose.

months of the year occurred March 11-13.

During the fall season, October, November, and December, there was an early cold spell October 18-19, which killed buds of cane on heavy soils in the Meeker, Bunkie and Cinclare areas. At Meeker, freezing and below freezing temperatures occurred five days in November and eight days in December. At the other test field locations there were no killing freezes until late December.

During the summer months, June, July and August, the rainfall at all test fields was below normal. The average monthly rate, expressed in inches, at the test fields for the three month period was as follows: Caffery, 4.36; Reserve, 4.25; Glenwood, 4.15; Cinclare, 3.11; Meeker-Cheneyville, 4.03 and Billeaud-Youngsville, 3.43. September was a month of excessive rainfall at Glenwood and Reserve, with the lowest at Meeker, Billeaud and Youngsville.

The harvesting weather during the month of October was ideal at all locations, while November was good during the first two weeks and very unfavorable in the last two weeks. December was generally warm with frequent rains and few cold spells, finishing with freezing weather during the last days of the month.

In October growth measurements of some of the commercial canes showed as high as twenty-four inches of growth for the month, with almost equally as good growth for the months of November and December. This condition occasioned low sugar yields, particularly in varieties like Co. 290 and C.P. 29-116, which did not show much improvement in maturity until after the cold spells that occurred in December.

**YOUNGSVILLE TEST FIELD**

| Variety | Normal Juice | | Purity | Tons Per Acre | Pounds commercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|---|---|
| | Brix | Sucrose | | | Per Ton | Per Acre |
| Fall Plant Cane (Olivier Silt Loam) | | | | | | |
| C. P. 43-47 | 17.48 | 14.53 | 83.12 | 28.23 | 199.41 | 5629.34 |
| C. P. 43-32 | 17.39 | 14.59 | 83.90 | 24.92 | 200.43 | 4994.72 |
| Co. 290 | 16.34 | 12.98 | 79.44 | 24.58 | 174.38 | 4286.26 |
| C. P. 44-69 | 17.19 | 14.93 | 86.85 | 20.00 | 205.98 | 4119.60 |
| C. P. 33-310 | 18.24 | 14.57 | 79.88 | 19.64 | 200.09 | 3929.77 |
| C. P. 43-9 | 15.77 | 12.27 | 77.81 | 23.46 | 163.15 | 3827.50 |
| C. P. 36-111 | 14.92 | 10.09 | 67.63 | 29.58 | 127.42 | 3769.08 |
| C. P. 43-28 | 15.49 | 11.67 | 75.34 | 23.97 | 153.75 | 3685.39 |
| C. P. 29-116 | 16.63 | 12.70 | 76.37 | 20.24 | 170.00 | 3440.80 |
| C. P. 36-105 | 17.86 | 14.69 | 82.25 | 16.89 | 202.04 | 3412.46 |
| C. P. 43-3 | 16.72 | 12.98 | 77.63 | 18.87 | 174.38 | 3290.55 |
| C. P. 36-13 | 17.67 | 14.74 | 83.42 | 15.76 | 202.84 | 3196.76 |
| C. P. 44-101 | 17.67 | 14.60 | 82.63 | ----- | 200.60 | ------ |
| C. P. 44-155 | 17.58 | 14.45 | 82.20 | ----- | 198.10 | ------ |
| First Stubble (Olivier Silt Loam) | | | | | | |
| C. P. 44-101* | 16.64 | 12.06 | 72.48 | 21.76 | 159.85 | 3478.55 |
| C. P. 36-183 | 17.20 | 14.43 | 83.90 | 14.92 | 197.78 | 2950.88 |
| C. P. 43-47 | 17.58 | 14.70 | 83.62 | 14.04 | 202.20 | 2838.89 |
| C. P. 43-3 | 17.01 | 13.12 | 77.13 | 14.97 | 176.62 | 2644.00 |
| C. P. 43-33* | 15.88 | 11.81 | 74.37 | 16.06 | 155.95 | 2504.56 |
| C. P. 44-155* | 17.02 | 12.56 | 73.80 | 14.18 | 167.76 | 2378.84 |
| C. P. 43-32* | 15.79 | 11.75 | 74.41 | 14.48 | 155.00 | 2244.40 |
| F. 31-762 | 17.86 | 14.93 | 83.59 | 9.70 | 205.98 | 1998.01 |
| C. P. 29-116 | 17.20 | 13.68 | 79.53 | 10.70 | 185.68 | 1986.78 |
| C. P. 36-111 | 16.44 | 12.15 | 73.91 | 12.06 | 161.30 | 1945.28 |
| Co. 290 | 16.44 | 13.62 | 82.85 | 9.50 | 184.72 | 1754.84 |
| C. P. 36-13 | 17.39 | 14.37 | 82.63 | 9.00 | 196.82 | 1771.38 |
| C. P. 34-120 | 17.77 | 14.62 | 82.27 | 8.06 | 200.92 | 1619.42 |
| C. P. 36-105 | 18.05 | 14.64 | 81.11 | 7.74 | 201.24 | 1557.60 |
| C. P. 33-310 | 17.86 | 14.54 | 81.41 | ----- | 199.58 | ------ |
| C. P. 44-153** | 15.21 | 10.43 | 68.57 | ----- | 133.34 | ------ |

* Harvested for seed cane, weighed, tested and planted on increase basis October 13-14, 1948.

** Sampled and tested October 13, 1948.

**Fall Plant Cane (Olivier silt loam):** Planted September 29, 1947. Machine cut and burned November 11, 1948. Juice analyses on a small mill basis from samples consisting of thirty stalks of each variety were made at the Youngsville Factory laboratory on November 12, 1948.

Under the extreme drouth conditions that prevailed, C. P. Nos. 43-47 and 43-32 showed up best; while Co. 290 ranked third and C. P. 33-310 ranked fifth. Four unreleased varieties, C. P. Nos. 44-69, 43-9, 36-111 and 43-28 outranked C. P. 29-116 and C. P. 36-105.

**First Stubble (Olivier silt loam):** Planted September 13, 1946. Harvesting dates: November 27, 1947 and November 10, 1948. Harvested by hand and burned November 10-11, 1948. Juice analyses on a small mill basis from samples consisting of thirty stalks of each of the eleven varieties were made at the Youngsville Factory laboratory Nov. 12, 1948.

C. P. 44-101 promising unreleased variety, which was tested in October, ranked first; followed by C. P. Nos. 36-183, 43-47 and 43-3. Four unreleased varieties, C. P. Nos. 43-33, 44-155 and 43-32 and F. 31-762 outranked C. P. 29-116 and Co. 290.

## Field Plantings

The fall plantings of sugar cane varieties at Cinclare, Glenwood, Reserve, Meeker, Shirley, Caffery, Billeaud and Youngsville test fields were made during the period of September 20 through October 6. Nine experimental fields were planted of an average size of 3.40 acres, and a total of 30.70 acres at the eight locations.

*Main Plot Tests:* Three to four rows per plot. Plantings consisted of three to five commercial canes, and seven promising unreleased varieties.

*Introductory Plantings:* Each of the eight Experiment Station test fields, received small lots of seed cane of nine promising new varieties, as follows: C.P. Nos. 44-132, 44-154, 45-150, 45-153, 45-154, 46-37, 46-40, 46-51 and 46-193. These varieties were grown at the Louisiana State Unversity Sugar Experiment Station, and were taken in cooperators trucks to the test fields. Small plot plantings were made at each location.

## New Varieties

C.P. 33-224, a 1937 introduction, has given fine performance at Cinclare on Sharkey soil; ranking first in both plant cane and first stubble tests in 1948. It is a large diameter greenish white cane, and compares favorably with Co. 290 in sucrose and milling qualities.

F. 31-762, a seedling of the Florida Experiment Station, was introduced on the test fields in 1943. This unreleased cane has a very good test field record in the Teche and Western sections. In the 1948 results at the Caffery test field, F. 31-762 outranked Co. 290 in the four experimental fields of first, second and third stubble and plant cane. In the available sugar yield data, which represents an average of these four fields, it gave a calculated yield of 18.30 pounds per ton and 701.22 pounds per acre more than Co. 290.

1945 *Introductions:* C.P. Nos. 43-33 and 43-47, are two of the most promising hybrid canes of this lot of seven of the 1943 series. Both varieties have good mechancial harvester qualities and showed fairly good field yields. C.P. 43-33 has a high sucrose record; while C.P. 43-47 is slightly lower than C.P. 34-120. C.P. 43-3 and 43-9, are two very vigorous growing canes, with comparatively low sucrose records.

**RAINFALL—SEASON OF 1948**

| Location | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | days | inches | days | inches | days | inches | days | inches | days | inches | days | inches |
| Cinclare* | 14 | 5.95 | 9 | 3.78 | 8 | 8.15 | 4 | 3.46 | 3 | 2.73 | 8 | 4.45 |
| Glenwood | 11 | 4.82 | 11 | 2.48 | 10 | 10.04 | 4 | 3.14 | 2 | 1.22 | 6 | 4.23 |
| Reserve* | 15 | 6.21 | 8 | 2.06 | 12 | 13.98 | 5 | 2.61 | 5 | 2.17 | 7 | 2.67 |
| Caffery | 3 | 2.35 | 4 | 4.35 | 6 | 7.30 | 3 | 3.85 | 4 | 3.55 | 3 | 2.52 |
| Cheneyville* | 6 | 4.97 | 12 | 5.54 | 6 | 5.95 | 5 | 4.16 | 5 | 3.95 | 4 | 0.75 |
| Meeker | 3 | 1.76 | 4 | 8.65 | 4 | 5.18 | 2 | 4.21 | 5 | 4.18 | 4 | 0.67 |
| Billeaud | 6 | 4.87 | 6 | 4.72 | 7 | 5.51 | 4 | 4.00 | 4 | 2.60 | 3 | 1.08 |
| Youngsville | 4 | 4.51 | 5 | 3.23 | 6 | 4.66 | 2 | 3.41 | 3 | 2.08 | 4 | 1.15 |

| Location | July | | August | | September | | October | | November | | December | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | days | inches | days | inches | days | inches | days | inches | days | inches | days | inches | days | inches |
| Cinclare* | 8 | 2.36 | 7 | 2.53 | 11 | 5.94 | 2 | 0.37 | 14 | 11.63 | 9 | 5.22 | 97 | 56.57 |
| Glenwood | 9 | 4.92 | 9 | 3.39 | 8 | 11.91 | 1 | 0.83 | 11 | 10.56 | 9 | 7.07 | 91 | 64.61 |
| Reserve* | 13 | 4.38 | 13 | 5.69 | 14 | 15.67 | 3 | 0.63 | 15 | 10.01 | 9 | 6.40 | 119 | 72.48 |
| Caffery | 5 | 5.05 | 9 | 5.80 | 6 | 7.45 | 1 | 0.65 | 9 | 10.85 | 7 | 7.05 | 60 | 60.77 |
| Cheneyville* | 9 | 1.99 | 9 | 2.59 | 9 | 4.98 | 3 | 1.36 | 17 | 17.34 | 8 | 9.27 | 93 | 62.85 |
| Meeker | 9 | 3.37 | 6 | 2.74 | 3 | 3.11 | 3 | 2.36 | 11 | 20.28 | 7 | 4.39 | 61 | 60.90 |
| Billeaud | 15 | 4.21 | 11 | 4.71 | 7 | 2.49 | 2 | 2.35 | 11 | 13.56 | 6 | 5.95 | 82 | 56.06 |
| Youngsville | 8 | 4.71 | 10 | 4.71 | 4 | 1.68 | 1 | 1.63 | 8 | 10.62 | 5 | 5.83 | 60 | 48.22 |

Foot Notes:
* Climatological Data, U. S. Department of Commerce Weather Bureau.
Other locations: from plantation rainfall records.
Days: Number of days rain occurred.
Ins: Inches of rain.

In the 1948 results, C.P. 43-3 outranked C.P. 43-9 duplicating its performance of the 1947 season.

1946 *Introductions:* C.P. 44-101 showed very good response at all of the test fields. It ranked first in one first stubble test and first in four plant cane tests. C.P. 44-153 lodged badly and showed low sucrose content in most of the test. C.P. 44-155 made a favorable showing at the Glenwood, Caffery, Billeaud and Youngsville test fields.

1947 *Introductions:* C.P. Nos. 45-122, 45-125 and 45-184, were the most promising of the eight new varieties planted in the fall of 1947. These canes were planted on a larger plot scale, so as to obtain comparative plant cane data in 1949.

## Evaluation of Results

Final results for the season of 1948 are presented in tabulated form for the eight Experiment Station test fields. This consists of a total of twenty-five sugar cane variety experimental fields of plant cane and stubble.

The following uniform headings are in the tables: (1) Variety; (2) Normal Juice; (Brix, Sucrose & Purity); (3) Tons Per Acre; (4) Pounds of Commercially Recoverable Sugar, Raw Value—Per Ton and Per Acre.

The table of the Production and Marketing Administration (Sugar Branch), entitled "Commercially Recoverable Sugar Determination (Revised) For Louisiana Sugarcane" was used in all of the sugar calculations.

**AVERAGES OF 1948 RESULTS**

| Variety | Normal Juice Sucrose | Tons Per Acre | Pounds Comercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|
| | | | Per Ton | Per Acre |
| **(1) Red River Section:** | | | | |
| Meeker Test Field (Yahola very fine sandy loam): | | | | |
| C. P. 36-13 | 11.96 | 26.02 | 158.26 | 4117.93 |
| C. P. 29-320 | 12.27 | 21.85 | 163.15 | 3564.83 |
| C. P. 36-105 | 12.10 | 22.07 | 160.50 | 3542.24 |
| C. P. 34-120 | 11.05 | 17.26 | 144.15 | 2488.03 |
| C. P. 36-19 | 11.46 | 14.41 | 150.50 | 2168.71 |
| Shirley Test Field (Yahola very fine sandy loam): | | | | |
| C. P. 36-105 | 12.67 | 28.83 | 169.52 | 4887.26 |
| C. P. 34-120 | 12.91 | 27.31 | 173.26 | 4731.73 |
| C. P. 29-320 | 13.68 | 25.45 | 185.68 | 4725.56 |
| C. P. 43-33* | 12.49 | 27.06 | 166.64 | 4509.28 |
| C. P. 36-13 | 12.36 | 27.37 | 164.56 | 4504.01 |
| C. P. 43-47 | 12.05 | 27.08 | 159.70 | 4324.68 |
| **(2) Upper Mississippi River Section:** | | | | |
| Cinclare Test Field (Yazoo soil or "sandy land"): | | | | |
| C. P. 29-320 | 13.98 | 22.98 | 190.48 | 4377.23 |
| C. P. 36-105 | 13.78 | 22.92 | 187.28 | 4292.46 |
| C. P. 29-120 | 12.88 | 24.42 | 172.78 | 4219.29 |
| C. P. 34-120 | 12.95 | 20.49 | 173.90 | 3563.21 |
| C. P. 36-13 | 12.15 | 19.30 | 161.30 | 3113.09 |
| Cinclare Test Field (Sharkey soil or "black land")**: | | | | |
| C. P. 33-224 | 11.13 | 30.48 | 145.38 | 4431.18 |
| C. P. 34-120 | 12.67 | 25.30 | 169.52 | 4288.85 |
| C. P. 36-105 | 12.70 | 21.40 | 170.00 | 3638.00 |
| C. P. 36-13 | 10.95 | 22.82 | 142.50 | 3251.85 |
| **(3) Lower Mississippi River Section:** | | | | |
| Glenwood Test Field (Yazoo soil or "sandy land", Bayou Lafourche): | | | | |
| C. P. 36-13 | 12.22 | 27.59 | 162.40 | 4480.62 |
| C. P. 36-105 | 12.65 | 24.79 | 169.20 | 4194.47 |
| C. P. 34-120 | 11.55 | 27.03 | 151.90 | 4105.86 |
| C. P. 29-120 | 12.35 | 24.87 | 164.40 | 4088.63 |

Foot Notes:
Data for Meeker, Shirley, Cinclare (Yazoo soil) and Glenwood test fields based on averages of plant cane, first and second stubble.
* Data based on averages of first and second stubble.
** Data based on averages of plant cane and first stubble.

**AVERAGES OF 1948 RESULTS**

| Variety | Normal Juice Sucrose | Tons Per Acre | Pounds Comercially Recoverable Sugar, Raw Value | |
|---|---|---|---|---|
| | | | Per Ton | Per Acre |
| Reserve Test Field (Yazoo soil "or sandy land"): | | | | |
| C. P. 34-120 | 11.74 | 33.49 | 154.84 | 5185.59 |
| C. P. 36-105 | 12.87 | 28.26 | 172.62 | 4878.24 |
| C. P. 36-13 | 12.58 | 26.96 | 168.08 | 4531.44 |
| C. P. 29-120 | 13.05 | 20.07 | 175.50 | 3522.29 |
| **(4) Teche Section:** | | | | |
| Caffery Test Field (Baldwin clay loam): | | | | |
| C. P. 36-105 | 12.60 | 24.65 | 168.40 | 4151.06 |
| C. P. 34-120 | 12.23 | 24.93 | 162.55 | 4052.37 |
| C. P. 36-183 | 12.88 | 23.08 | 172.78 | 3987.76 |
| F. 3-1762 | 11.80 | 24.19 | 157.30 | 3805.09 |
| C. P. 36-13 | 12.69 | 21.02 | 169.84 | 3570.04 |
| Co. 290 | 10.75 | 22.33 | 139.00 | 3103.87 |
| **(5) Western Section:** | | | | |
| Billeaud Test Field (Lintonia silt loam): | | | | |
| C. P. 36-105 | 11.49 | 26.16 | 150.95 | 3948.85 |
| C. P. 29-116 | 10.43 | 27.96 | 133.34 | 3728.19 |
| Co. 290 | 10.77 | 25.98 | 139.36 | 3620.57 |
| C. P. 36-13 | 11.89 | 22.40 | 157.15 | 3520.16 |
| C. P. 33-310 | 12.14 | 21.60 | 161.14 | 3480.62 |
| C. P. 43-47 | 11.64 | 22.56 | 153.45 | 3461.83 |
| Youngsville Test Field (Olivier silt loam): | | | | |
| C. P. 43-47 | 14.62 | 21.14 | 200.92 | 4247.45 |
| Co. 290 | 13.30 | 17.04 | 179.50 | 3058.68 |
| C. P. 36-111 | 11.12 | 20.82 | 145.20 | 3023.06 |
| C. P. 36-183 | 14.00 | 14.96 | 190.80 | 2854.37 |
| C. P. 29-116 | 13.19 | 15.47 | 177.74 | 2749.64 |
| C. P. 36-105 | 14.67 | 12.32 | 201.72 | 2485.19 |
| C. P. 36-13 | 14.56 | 12.38 | 199.92 | 2475.01 |

Foot notes:
Reserve test field: data based on plant cane, first and second stubble.
Caffery test field: data based on plant cane, first, second and third stubble.
Billeaud and Youngsville test fields: data based on plant cane and first stubble.
Commercial field canes and time of release: Co. 290, 1933; C. P. 29-320, 1935; C. P. 29-116, 1936; C. P. 29-120, 1939; C. P. 34-120, 1942; C. P. 33-310, 1943; C. P. 36-105, 1945; C. P. 36-13, 1946; and C. P. Nos. 36-19 and 36-183, 1947.
Unreleased varieties and time introduced on test fields: C. P. 33-224, 1937; F. 31-762, 1943; C. P. 36-111, 1942; and C. P. Nos. 43-33 and 43-47, 1945.

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## FERTILIZER

(Continued from page 344)

In one test (Table 7), the cane was fertilized at time of planting, using nitrogen at 16, 32, 48, and 64 pounds per acre. Compost was applied to one set of plots at the rate of 10 tons per acre. These fall treatments were compared with nitrogen treatments made during the usual spring fertilization period. Disregarding spring treatments, the fall treatments had practically no effect on yields of cane or sugar per acre. Disregarding fall treatments, significant yield increases were obtained from the spring application of 36, 60, and 96 pounds of nitrogen per acre, but practically identical yields were obtained from these 3 treatments.

The Brix, sucrose, and purity figures shown in the tables are data obtained by analysis of the crusher juice. The yields of sugar per ton of cane were calculated by means of the Winter-Carp formula.

[1] Throughout this paper and in the tables the pounds of the major plant food constituents, N. $P_2O_5$; and $K_2O$, applied per acre, are stated in the order indicated These values should not be confused with fertilizer grades customarily expressed in this form.


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|---|---|---|---|---|---|---|---|---|
| | Acc. Cane | Molasses Bonus | Acc. Recoverable Sugar | Abandonment Payment | Deficiency Payment | Total Conditional Payment | | |
| 1937 | 2.907 | ----- | .892 | .023 | .016 | .931 | ----- | 3.838 |
| 1938 | 2.663 | ----- | .948 | ----- | ----- | .948 | ----- | 3.611 |
| 1939 | 2.881 | ----- | .976 | ----- | ----- | .976 | ----- | 3.857 |
| 1940 | 2.717 | ----- | .908 | .013 | .258 | 1.179 | ----- | 3.896 |
| 1941 | 3.679 | .256 | .924 | .005 | .084 | 1.013 | ----- | 4.948 |
| 1942 | 4.033 | .319 | 1.240 | .001 | .084 | 1.325 | ----- | 5.677 |
| 1943 | 3.936 | .323 | 1.213 | .008 | .023 | 1.244 | .341 | 5.844 |
| 1944 | 3.837 | .313 | 1.165 | .048 | .004 | 1.217 | .826 | 6.193 |
| 1945 | 3.762 | .320 | 1.158 | .008 | .002 | 1.169 | 1.496 | 6.747 |
| 1946 | 6.222 | .322 | 1.235 | .041 | .001 | 1.277 | ----- | 7.821 |
| 1947 | 6.634 | .609 | 1.250 | .001 | .136 | 1.387 | ----- | 8.630 |
| 1948 | 5.821 | .058 | 1.180 | .001 | .035 | 1.216 | ----- | 7.095 |


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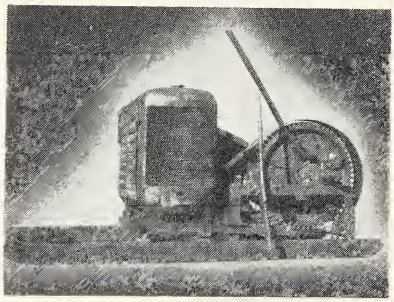

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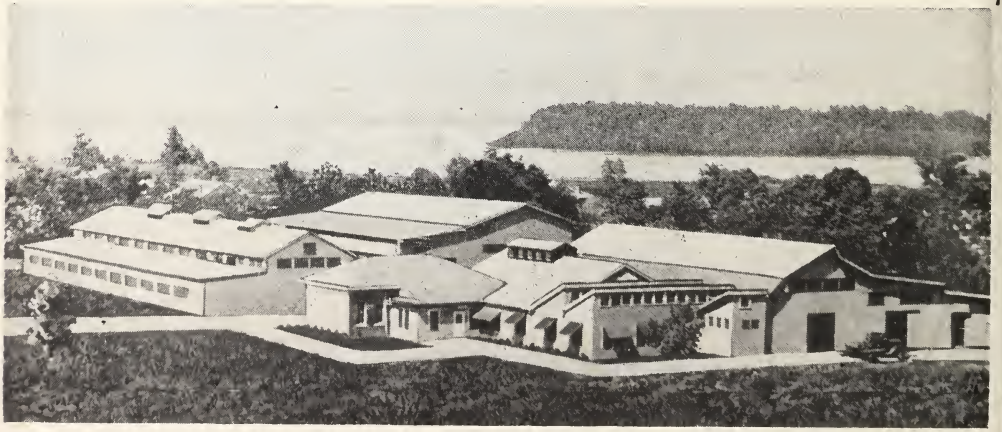

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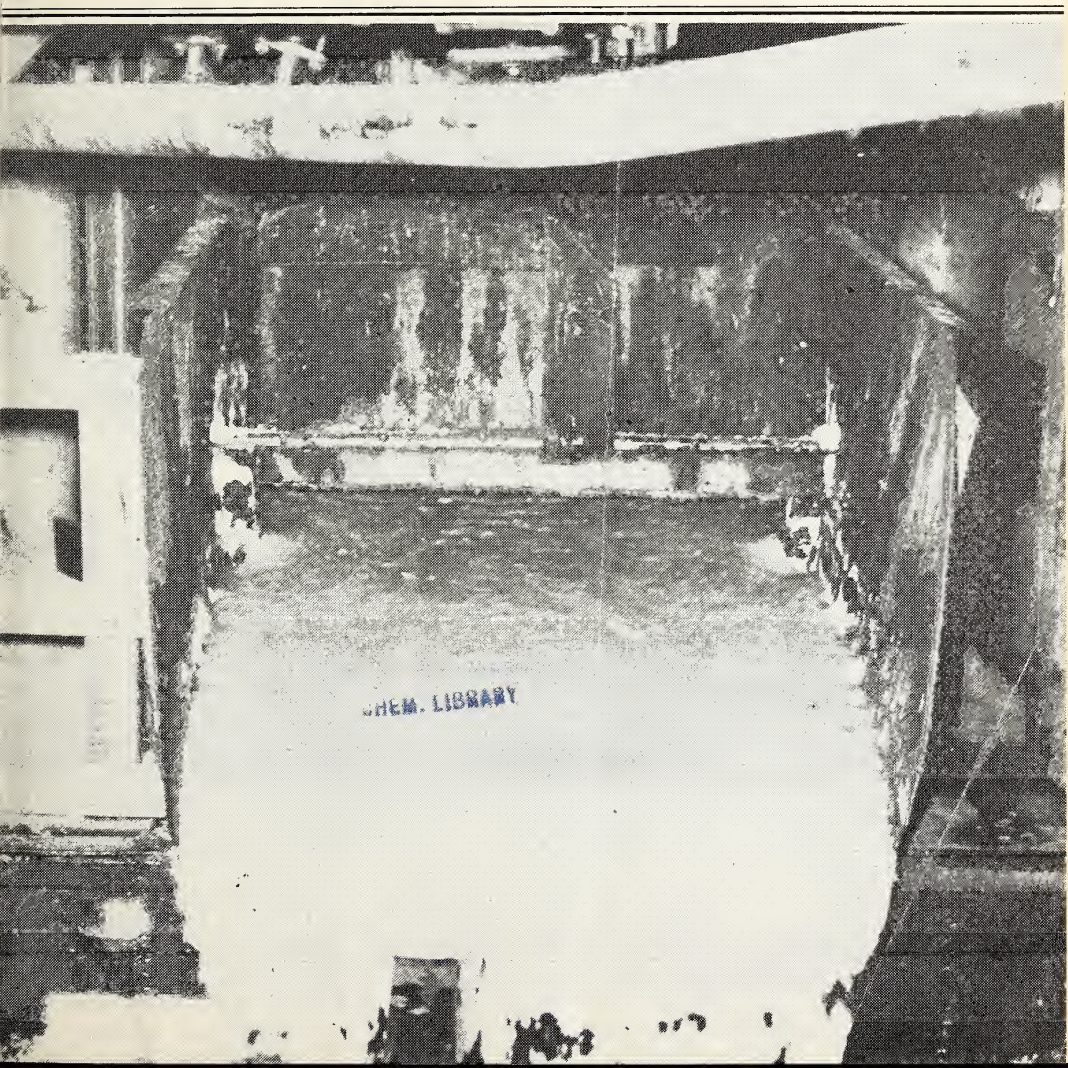

THE
# SUGAR BULLETIN

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MARCEL J. VOORHIES, Editor

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# SUGAR DOWN THROUGH THE CENTURIES

*By Geo. L. Billeaud*

*Editors note: The article printed below is an address that has been presented by Mr. George L. Billeaud, of Broussard, La., at numerous Rotary Club meetings in Louisiana.*

*"Sugar Down Through The Ages" has met with such hearty local acclaim that we have asked Mr. Billeaud to allow us to print it so that the more than 7,000 readers of THE SUGAR BULLETIN may enjoy it as a story and an educational document. Extra copies are available upon request.*

The spread of sugarcane and the growth of the sugar industry reveal tales of adventure and stories of historical consequence. It has played, and continues to play, a very important role in world governments and in international trade. Texts reveal that as early as 200 B.C., China was receiving sugarcane as a tribute from some of the kingdoms of the East. Alexander the Great, 300 years before the beginning of the Christian Era, brought cane from India to Europe. But, it was not until about 700 A.D. that it was cultivated there.

The art of making sugar was discovered in India. From the ancient Indian word SAKKAR is derived the modern English word SUGAR, and likewise, from the Indian word KHANDA is derived the English word CANDY. The process was a very crude one. The cane was cut into short pieces and was crushed between heavy weights that were hand-pressed against each other. The extracted juice was boiled and stirred until solids formed. These solids, of uneven shapes and sizes, looked very much like small gravel.

The first to produce white sugar were the Nestorian Monks, a religious group who dwelled near the mouth of the Euphrates River and who used the precious crystals principally as medicine. Improvement in the art of making sugar continued. However, the supply was small, and for many centuries it was to be found only on the tables of the royalty and of the rich, or utilized by physicians in medicines. As the supply increased and the quality improved, sugar plantations began to appear and multiply in Syria, Palestine and Egypt. Trade between these centers and Italy was established. Commerce between northern Europe and the city of Venice began to increase. Venice had become an important sugar trading center, and in 1319, a Venetian merchant shipped a cargo of sugar to a concern in England in exchange for wool. There followed a period of great prosperity.

During the 15th century sugarcane began to appear in Maderia, the Azores and the Cape Verde Islands. Spanish colonization of the Canary Islands brought with it the establishment of the industry on these islands; and, with the assistance of slave labor, sugar was produced there at a lower cost than in the Mediterranean area. Not long afterwards, however, came the Turkish Conquest, and with it, the disruption of the cultivation of sugarcane and of the production of sugar in the East. The industry began to disintegrate, and the period of great prosperity when sugar currently sold at $2.50 per pound on the London Market, had come to an end.

With the discovery of America and the colonization of the West Indies by the Spanish and the Portuguese, the sugar industry of the New World was born. The first attempt to produce sugarcane in the New World was made by Christopher Columbus on his second voy-

(Continued on page 387)

# Doctor Rene John Steib Joins Staff of the American Sugar Cane League

On August 1st, 1949 Doctor Rene John Steib became Assistant Manager of the American Sugar Cane League of the U. S. A., Inc.

Dr. Steib was born in St. James Parish July 18th, 1918. He attended the public schools of St. James Parish and was graduated from High School in 1936. He then enrolled at Louisiana State University where he was awarded a Bachelor of Science degree in the school of Vocational Education in 1941. Upon graduation from the University he entered Military Service as a Second Lieutenant, serving overseas, and leaving the Army in 1946 with the rank of Captain. He, Steib, immediately returned to Louisiana State University and in 1947 received his Master of Science degree in Plant Pathology and Botany and in 1949 was awarded a Ph.D. degree in Plant Pathology, majoring in sugarcane research.

Dr. Steib knows the Louisiana sugar industry and the people engaged in it. He speaks French, having been raised in a typical French community. The Louisiana Sugar Industry is fortunate in having secured the services of a young man technically well trained and so admirably qualified in temperament and disposition. His contributions to the general efforts continuously exerted by the league for the betterment of conditions in the industry should be increasingly felt and we are sure will be greatly appreciated and highly important.

———o———

# THE FOOD TRADE STANDPOINT

*by Charles F. McCarthy*

*Reprint From Journal of Commerce, July* 29, 1949

### The Great Reversal

In 1948 before they had the feel of operating the market under the quota system, the wartime installed sugar officials of the Department of Agriculture listened too intently to the pleas of sugar users for a high quota and ignored the more authoritative voice of the industry's experts. The result is on the record. Garbled planning produced garbled results.

Instead of a price for sugar in line with the Consumers' Price Index which Congress spelled out in revising the Sugar Act, the price in 1948 sank way below. As a matter of fact, in the Government Sugar Report issued on July 7, 1949 (page 8) is the startling statement that the price of sugar in 1948 in comparison with other foods was the lowest on record.

It was understandable, then, even before the mid-November hearings

(Continued on page 386)

# IN WASHINGTON WITH C. J. BOURG

## R & MA Administrator Resigns

E. A. (Woody) Meyer resigned as Administrator of the Research & Marketing Act at the end of July. He was a very efficient Administrator and always listened with reasonable friendliness to the desires of the domestic sugar industry. He was somewhat handicapped by the fact that the Act specifies that problems of marketing research and utilization should be emphasized over and above production research in which category breeding of sugarcane falls.

The general supervision of marketing policies and programs have been assigned to Assistant Secretary of Agriculture Knox T. Hutchinson. These functions include coordination of marketing activities and the relationship on research with other Federal agencies such as the Division of Sugar Plant Investigations and the Bureau of Agricultural and Industrial Chemistry, in both of which important sugar projects are now under way.

The administration of the Research & Marketing Act has been assigned to Dr. P. V. Cardon, who is also Administrator of the Agricultural Research Administration. He will inherit the staff from the old Administrator's office.

We have fared fairly well under Woody Meyer and we are very hopeful that we will find many things in common with Dr. Cardon, whom we have known quite well as Administrator of ARA.

## Wage & Hour Act

Congress is at present wrestling with the Wage & Hour law. This matter had been thoroughly gone into earlier this Session and had been "re-committed" to the Labor Committee in the House. A last-minute move is being made to resurrect the whole matter before Congress adjourns.

The House has passed the Lucas Bill which provides for a 75¢ minimum wage per hour, and including Section 7(c) which exempts the processors from hours or overtime. The Senate has been postponing action, although the Amendments have been made the "unfinished business", but consideration is being postponed pending the completion of Appropriation Bills, which take precedence under Senate rules.

## Foreign Labor

The U. S. Government has reached an agreement with the Mexican Government on the recruitment of Mexican Nationals for employment in the United States in agriculture. This matter has been very long drawn out and the Mexicans constantly provided delays until the agreement was signed as of August 1st.

Louisiana does not use Mexicans ordinarily, but the existence of this agreement will make available to growers in the beet area and others, to the extent that it should be easier to recruit workers for the Louisiana harvest. We do have tentatively an

(Continued on page 385)

# A DISCUSSION OF CLARIFICATION PROBLEMS AND LOW SUGAR YIELDS IN LOUISIANA SUGAR FACTORIES

*By Feltus B. Leake*

*Presented at the Meeting of the Manufacturing Section, Houma, La., June 22, 1949*

Prior to 1943, clarification of cane juices in Louisiana was not a difficult problem. The juices are not refractory, and contain a sufficient amount of phosphates, so that the simple defecation process, using heat and lime, was all that was needed to obtain a brilliant juice that worked exceptionally well in the manufacture of raw sugar.

Beginning with the 1943 crop certain factories began experiencing clarification trouble and the condition has steadily grown worse, until during the 1947 and 1948 crops, clarification of the juice became so difficult that many of the factories found it necessary to greatly decrease the grinding rate, which along with low sugar yields has reduced the margin of profit in most factories and caused some to go out of business.

With these very serious facts facing the industry, the question arises as to what can be done to improve these conditions. During the last few crops different factories have tried the addition of phosphoric acid, bentonite, powdered oyster shell and soda ash; also liming of hot juice, washing the cane, with some benefit being reported from all. However, there is no doubt that the main cause of poor clarification and low sugar yields in Louisiana is stale cane, and the best way to improve both is for factories to receive and grind fresh cane.

It is a known fact that trash, shucks, tops and soil, besides being costly to handle, make clarification of the juice very difficult; but even with a high percentage of this foreign matter, clarification troubles are greatly minimized and sugar yields substantially improved if the cane is ground fresh.

The above statement is based on actual results from a small number of Louisiana factories that have been in a position to control the supply of cane and grind it before there was a drop in purity. Since 1942 this small group of factories has kept the actual yield of sugar per ton close to the theoretical yield corresponding to normal juice sucrose. If this has been accomplished by a few, should not the industry as a whole demand a supply of fresher cane?

Realizing that the time has not arrived when we can expect fresh cane, free from trash, I have asked several factory Superintendents and Managers to write a report on work they have done on clarification problems, and the reports are presented below.

(The reports referred to by Mr. Leake will be printed in *The Sugar Bulletin* as space permits.)

—o—

# THE USE OF GROUND OYSTER SHELL AS AN AID TO CLARIFICATION OF CANE JUICE

Prior to the 1948 grinding season it was suggested by Mr. E. K Ventre that the use of Calcium Carbonate might aid in the clarification of sugar cane juice. At the beginning of the season Mr. Ventre accepted the invitation of the South Coast Corp. to make some laborato-

ry tests with Calcium Carbonate, and the results of these tests were so promising that the South Coast Corporation decided to try the carbonate in plant operations. Upon investigation it was found that a cheap source of calcium carbonate was available in the form of ground oyster shell, obtainable from the Oyster Shell Products Co., Morgan City, La. The grist specification was 65% to pass through 200 mesh, and the cost was $8.00 per ton F.O.B. Morgan City Plant.

It was first put into use at the Terrebonne factory at Montegut, and the observations of Mr. J. M. Hancock were so favorable that it was decided to use it at the Georgia Refinery also.

At Georgia the cane juice is weighed by pneumercator in 3 cylindrical tanks having a capacity of 30,000 pounds each, agitation by compressed air. The calcium carbonate was introduced at this station, at the rate of 3 pounds per ton of cane; the juice, with carbonate added, was heated to 216° F. and limed in a Java tank before going to the Dorr Clarifier The liming was controlled by a Foxboro pH Controller.

When we first started using the calcium carbonate it was the consensus of opinion of the superintendents that we obtained a decided improvement in the clarification. Later on we reduced the rate of treatment to 1½ lbs. per ton, with noticeable difference. Then we tried clarification without the carbonate, with 3 pounds per ton, with 1½ pounds per ton, and the results were most confusing. At times there seemed to be improvement, and at other times there was no noticeable difference. Of course the mill juices were so mixed and so variable that it was difficult to establish any sort of relationship between the quality of the juice and the benefits from using calcium carbonate.

My own view is that under the circumstances which prevailed last season I would use calcium carbonate with the idea of obtaining any benefit which *might* be derived. The cost of the material is negligible and there is no extra labor cost in using it.

Of course, this is no magic treatment, and was not meant to be so construed by Mr. Ventre. We all know the answer to these clarification problems, they have been pointed out many times by many different technicians, and we can best solve them if we all keep working to end the conditions which develop the problems.

—o—

# THE USE OF LIGHT SODA ASH IN CANE JUICE CLARIFICATION

With the milling of fresh cane as we had prior to the war years the clarification and handling of the mud from the cane juice was a very simple matter of adding sufficient lime (CaO), either dry or as milk of lime. Clarification was as a whole throughout the state very good, and with the delivery of fresh cane today to the mills our clarification would be good, and our sugar recovery much higher.

"Necessity is the mother of invention", and with the shortage of labor in the cane fields came the cane harvester, cane pilers, and new type of cane loaders which were more than welcome and definitely have their part to play in our economic structure. However, the grower using the cane harvester has been cutting cane and leaving it on the ground too long a period

(Continued on page 385)

# HYBRID CORN

*by I. N. Arceneaux*

*Presented at the Meeting of the Agricultural Section, Houma, La., June* 22, 1949

Realizing that acreage devoted to corn production on Louisiana cane plantations is an ideal source for spread of Johnson grass, our efforts have been directed to producing our feed requirements on a minimum acreage.

A study of yields in various sections of the South indicated best results were obtained with a plant population of 14,000 stalks per acre; a rather drastic increase from our former practice of planting 3000 to 3500 plants per acre. All experiments studied also showed that yields from hybrid corn were superior to yields from open pollinated corn, and that other factors being equal, a direct ratio of increased yield resulted from increased fertilization.

All yield data available to us was based on experiments where row widths were 36″ to 40″ and spacing between stalks 12″. For convenience, and adaptability to our cane tools we wished to plant on the conventional 72″ cane row and therefore had some uncertainty as to results of spacing thick enough to compensate for the wide rows.

With rows six feet apart, corn drilled at six inch intervals will produce 14,100 plants per acre. We used a duplex hopper with six inch spacing for corn and interplanted soya beans at six inch intervals. We realize this practice is unnecessary and a mistake, as the thick spacing of corn affords such a complete cover that weed and grass competition is negligible, and the beans probably deprived the corn of some needed moisture and plant food. Additionally we were unfortunate in using a drill designed for open pollinated corn, the grain of which is larger than the hybrid corn used, and this unanticipated difference resulted in a thicker spacing than planned; our row count in May showing 13,000 to 17,000 plants per acre. Our yields indicate that 14,000 plants per acre will produce maximum results, as production was adversely affected wherever plant population was significantly above or below this figure.

Our 1948 acreage was planted on land from which second stubble had been plowed out. A week before planting, rows were opened and 300# of 12-8-0 was applied and disked into the drill. Funk's G737 seed corn was used. At second cultivation when corn was knee high, a side dressing of 60# of Nitrogen (Aeroprills) was applied. Crop was laid by in late April, using our regular cane tractors and cultivators. May, June and July were extremely dry months, and it was feared our experiment would fail due to moisture deficiency, however, the adequacy and availability of plant food evidently compensated for lack of moisture, and a most satisfactory yield was made.

Care was taken in measuring acreage and weighing corn, and yields ran from 67 to 91 bu. per acre, averaging 84 bu. per acre.

No attempt was made to hoe or thin the corn, and our only increased cost above our normal practice was for additional seed and fertilizer.

With the information and experience from our 1948 experiment, we expect to produce in excess of 100 bu. per acre this year, and make our feed requirements on 28 acres.

## IN WASHINGTON

(Continued from page 381)

agreement with growers in Wisconsin, Illinois, Indiana and Iowa, by which the Louisiana planters will use about 2000 Jamaicans or British West Indies workers during the grinding. A contract is being drawn up at this time on which the exchange of workers will be readily made for the convenience of Louisiana sugarcane planters.

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## SODA ASH

(Continued from page 383)

before delivery to the factories, resulting in cane that has started to deteriorate, and that is where the trouble starts in the clarification of the cane juices and overtaxing of the clarification facilities at the factories.

During the 1945 season the clarifiers that the writer was operating were overtaxed though the grinding rate has been reduced, and with the addition of light soda ash to the juice the situation was immediately improved. We continued the use of soda ash the rest of the season with very favorable results and continued its use throughout the crops of 1946, '47, and '48.

The general procedure in using light soda ash is as follows:

1. At the beginning of the season when fresh cane is milled the amount of lime needed to give a brilliant juice is noted. This amount of lime (CaO) with the phosphoric acid ($P_2O_5$) in the juice will give a good floculation and quick precipitation of the coagulated mud and gums.

2. To counteract the rising acidity from old cut cane, light soda ash should be used instead of adding more lime to the juice to maintain the same pH that was carried with fresh cane. The soda ash should be added with the lime.

3. When mud levels continue to rise beyond normal operations of the clarifier it is usually caused by recirculation of mud from the Oliver Filter. This can be remedied to some extent by the addition of lime at the mud mixing tank to an amount until the clear filtrate from the Oliver Filter is almost clear. By doing this you stop the recirculation of mud returning to the already overtaxed clarifier, and allow the clarifier to operate at almost normal operation. The filtrate returning from the Oliver Filter is heavily limed and when it is added to the mixed juice from the mills less lime will be required at the liming station. Adding lime to the mud for a long period will cause bald spots to appear on the Oliver screen, varying in size from 1" in diameter to large areas where the perforations in the screen are completely stopped up. This is undoubtedly caused by the excessive amount of lime used which dries out after the juice has been pulled through, leaving just enough to dry by the air and heat at the perforations in the form of lime saccharate, which over a period of time causes the perforations to close. This can be remedied by pumping water through nozzles, at 150 to 200# pressure, against the screen blowing the perforations clean. Also by revolving the screen through a dilute solution of hot muriatic acid, using an inhibitor to protect the screen.

4. The amount of light soda ash varies, however, it was never necessary to use more than one pound per 100 lbs. of lime. The cost of the soda ash is about $2.80 per 100 lbs. A mill grinding 2000 tons of cane daily would use a maximum of 40 lbs. or a cost of $1 12 per day.

In conclusion the writer believes that from the past few years with old cut cane, with cane leaves and grass that have deteriorated to a moldy state (giving a juice that will not clarify with lime alone) and with an excessive amount of dirt, the waxes do not have a chance to rise in the clarifiers and are carried along and held with the mud. With excessive liming (though still maintaining a low pH) there is an increase of saturation causing suspen-

sion of the combined muds and waxes. Also a heavily limed juice produces soluble salts that are objectionable throughout the process. With the use of light soda ash along with lime a lower saturation is attained and possibly saponification of the waxes causing muds to settle at a faster rate. Additional benefits noted from use of soda ash are that a clear, light colored juice is obtained, less scale deposits on evaporation surfaces, the massecuites work freer in the pans; the sugar dries faster and has a lighter color.

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## FOOD

(Continued from page 380)

to consider quotas for 1949, why Secretary Brannan and his Department's sugar directors should want to get prices into line on their second full year's try. Not only was it important to get the price into line with other products, but it was politically expedient to check the dangerous decline taking place in domestic beet sugar production.

So instead of an initial figure of 7,800,000 tons as in 1948, the 1949 quota was set at 7,250,000 tons, even though it was estimated then that 700,000 tons of the quantities allocated would not be filled. In other words, the effective quota was only 6,550,000 tons until the Department saw fit to increase Cuba's quota. Cuba had the sugar. Consumption at the time the quota was set was being estimated in industry circles at 7,500,000 to 7,800,000 tons.

This quota and consumption outlook for the year set the market up and it began moving higher. From a low of 7.75¢ it had recovered to 8.15¢, and a good many were expecting that 8.40¢ a pound for refined sugar would be close enough to the Consumer Index. They were expecting it because everything Government officials said or printed implied that the aim was really to get the price into line with the Index.

Two or three attempts meanwhile, by the big sugar users as a group to have quotas raised, proved futile. The producers were holding their prices rigid, based on the relatively low quota. It seemed that the Government's plan of something well above 8¢ a pound was a safe bet.

But then came the grand reversal. As disinflation, mild recession, bad business and price skids hit the headlines along about May, the impression is that the large sugar users returned to Washington and put on the pressure "upstairs" to have the quotas increased to knock the price down on the theory that it would not look good for sugar, historically the nation's No. 1 "loss leader" to be bucking the economic trend.

That remains the impression among the many in this industry, although there are some who feel that when the Department went to work and ordered two increases of 500,000 tons in the quota within two weeks, they had been forewarned of the Hawaiian situation and were acting to prevent a runaway in prices. It will be recalled that about the time of the quota changes, one West Coast refiner began buying supplies which normally went to Eastern refiners and the market was beginning to show some fire.

The reallocations, however, ended the fire. Despite favorable developments since, the market has ignored them. Only this week, two refiners guaranteed the price for August at 7.85¢, a drop of 15 points in the list. That's a far cry from 8.80¢ which would be in line with the Index.

This decline, which is likely to become general, took place while Cuba, finding unexpected demand in the world market, was making plans to assure the United States that it would maintain enough stock to meet our needs. In other words, the monumental task of selling 5,700,000 tons of sugar in Cuba has been successfully completed, although at the start of the year, the predictions were that Cuba would

have a carry-over of 1,000,000 tons.

It is yet early to determine whether the Department got the nod "from above" when quotas were increased twice within two weeks or whether the Department was acting to hold off a sharp price run-up because of the Hawaiian shipping delays. Time will tell. For the time being, however, "the nod" belief dominates.

But if that version is correct and the big sugar users were instrumental in having quotas increased, they will have to be labeled a persistent group, for here they are back again *asking for another increase. Under date of July 22nd they have written to Secretary of Agriculture Brannan*—not to H.S.T.—asking for another increase. They cite five reasons why it should be granted:

First, distribution to July 1 is 300,000 tons in excess of a year ago.

Second, for the year July 1948 to July 1949, distribution amounted to 7,684,726 tons.

Third, if distribution follows the "normal" percentage pattern of 1935-36-38-40, total distribution in 1949 should amount to 7,590,000 tons.

Fourth, if distribution follows in the balance of the year the percentage pattern of 1948, the total in 1949 should amount to 8,107,000.

Fifth, a spot survey among member companies of several of the industrial groups indicated no acceptance of sugar deliveries except for immediate use. Inventories appear to be negligible. This would indicate that the 1949 level of sugar distribution is not higher than the consumption estimate because of the building of sugar stocks, but appears representative of the actual rate of use this year, the letter concluded.

It will be noted that the users' group says nothing about the prices. They stress high distribution, but the high distribution is near a level that the Government last year termed the lowest on record for sugar when compared with other commodities, 7.75¢.

The industrial users' arguments are sound, however. More sugar will be needed than is earmarked for distribution; but if the officials listen too intently to the users and take action now, they'll find the market on the skids. There is no inclination at the moment to get bearish at 7.85¢, but it will take a little encouragement to firm the market any. Based on the Consumer Price Index, sugar should be worth about 8.90¢. Those who expected 8.40¢ have revised their estimates downward substantially.

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## SUGAR CENTURIES

(Continued from page 379)

age to America in 1494, when he landed on the island of Santo Domingo. This attempt was not successful. It was tried again in 1506, and with the help of slaves imported from Africa, that attempt was successful. Shortly afterwards, in 1509, an attempt to produce sugar was made. That also was successful. The industry in the Caribbean area flourished. Spanish ships, loaded with sugar, sailed the seas. Charles V, King of Spain, waxed wealthy with revenues derived from sugar. Then it was that he built the famous palaces at Madrid and at Toledo. Pirates, roving the seas, sought sugar as eagerly as they did gold and silver. From Santo Domingo the duction of sugar spread to Mexico in 1520, where, a few years later, Cortez erected the first sugar mill on the North American Continent. Brazil started the cultivation of sugarcane in 1532 and Cuba and Puerto Rico in 1547. With increased supplies from America and the Caribbean area, prices began to fall, and at the beginning of the 16th century sugar was generally available at around 50 cents per pound.

The first to produce sugarcane in what is now the United States

were the Jesuit Fathers, in south Louisiana, in 1751, when negroes, who were experienced in its cultivation, were sent here from Santo Domingo. While successful in obtaining good growth, no progress was made in the extraction of sugar, and after repeated failures, the project was abandoned in 1776. In 1791, Etienne de Boré, a former mayor of the City of New Orleans, who is given the credit of being the father of the Louisiana Sugar Industry, produced the first crop of sugar on his plantation, situated on the east bank of the Mississippi River, near New Orleans and where presently lies the historic Audubon Park. This first crop of sugar sold for approximately $12,000.00. Detailed production records of the industry in Louisiana exist since 1815. A period of 134 years. This long period of recorded performance should certainly give the industry a status of maturity together with the accompanying attributes of stability and responsibility. During this long interval the industry has enjoyed periods of prosperity and it has likewise suffered periods of adversity.

In addition to the many natural hazards of weather to which all agriculture is subject, sugarcane in Louisiana has had recurrences of floods from the treacherous Atchafalaya and the mighty Mississippi Rivers; tropical hurricanes; early freezes; the devastating Mosaic Disease which all but wrote FINIS to this important chapter of Louisiana Agriculture; and last, but by no means least, the constantly changing political and economic theories of government—High tariff; medium tariff; low tariff; bounty; free trade; and in recent years, government-imposed production and sales quotas.

In spite of absorbing such punishment as few industries have, and surviving, the sugar industry in Louisiana today is on a sound basis, internally, largely due to the factors: (1) the constant development by Federal and State agencies of newer and better varieties of sugarcane, and (2) the almost complete mechanization in the fields for planting, cultivating and harvesting.

To the scientists in Washington and at Canal Point, Florida, who work in cooperation with the United States Department of Agriculture at Houma and with the Extension Department of Louisiana State University at Baton Rouge, those who are engaged in the production of sugarcane and the manufacture of sugar in Louisiana are deeply grateful. Without this work, which is continuously carried on by these scientists, it would be only a question of a few years before disease would complete its cycle of destruction, and sugarcane in Louisiana would become almost as much a curiosity as it is in most other states of the Union. The breeding of the sugarcane varieties is done by the Bureau of Plant Industry of the United States Department of Agriculture at Canal Point, Florida, where cane usually blooms into tassels and provides the opportunity for the breeding work. The resulting seedlings are sent from the Canal Point Station to the Federal and State Experiment Stations at Houma and at Louisiana State University at Baton Rouge where pathological tests are made. Every year between 10,000 and 20,000 and in some years as many as 40,000 seedlings are produced for pathological tests. Following these pathological tests, the two experiment stations in Louisiana conduct Agronomic tests, following which, the most promising varieties are sent out to various test fields located throughout the sugarcane growing parishes for further observation and for possible eventual distribution to all sugarcane growers.

During, and since World War II, when agricultural labor was, and still is in relatively short supply, modern mechanical appliances for producing and harvesting sugarcane

were initiated by a mere handful of Louisiana men. These have been men of great genius, patience, perseverance and skill, who literally took an apparently impossible problem by the neck, as it were, and forced it into submission. Today, the cane fields in Louisiana are filled with machines of various types and sizes, on high-lug rubber tires; tilling the earth; cultivating and fertilizing the young plants; burning and poisoning the competing weeds; and finally, when the soil has been forced to surrender its riches and the crop has come to its fullness, other machines, the harvesters and the loaders march with soldierly precision down the long cane rows, leaving empty spaces, where shortly before, long green leaves, like banners, waved idle fingers to the sky. To these few men whose perseverance has brought about this mechanical transformation, those who are engaged in the sugar industry in Louisiana are equally grateful.

The industry in Louisiana in its present form, normally produces annually, from approximately 4,000,000 to 6,000,000 tons of sugarcane, from which is processed from 350,000 to 450,000 tons of sugar, from 35,000,000 to 45,000,000 gallons of syrups and molasses, and from approximately 1,500,000 to 2,000,000 tons of bagasse, from which is in turn processed building and insulating boards, plastics, poultry litter, various chemicals, anti-freezes, solvents, drugs, etc. The combined total annual value of those products, by-products and products of by-products, originating from a relatively small area of the State of Louisiana amounts to about one hundred million dollars.

The Sugar Research Foundation, an association of persons engaged in the sugar industry throughout the sugar producing areas of the world, with headquarters in New York City, staffed by some of the outstanding scientists in the world, is making notable progress in its efforts to discover new uses for sugar and some of its by-products. For instance, it is now common knowledge that pure sugar is very effective in the treatment and prevention of tooth decay, especially in children. It is extensively used in the fight against the two principal killers, cancer and heart disease. In the treatment of the ancient disease known as mal-de-mer (sea-sickness). In the treatment of nausea in women during the early stages of pregnancy. In the diseases of the liver, such as jaundice, high sugar diets have been standard treatment. Glucose, (a form of sugar) has proven valuable as a supplement to digitalis in the treatment of heart ailments. It is also used when giving blood transfusions. With advanced civilization the need for sugar and some of its by-products has greatly increased. Sugar is the purest food known to science (99.99 plus per cent). It is universally regarded as the most economical and the quickest available form of food energy. It is one of the most nourishing foods, indispensable in making other foods more palatable, therefore, a basic and vital part in our daily diet. During the last war sugar played a most important role as an essential raw material as well as a finished product. Its use in the ration and emergency kits of the fighting forces and in the production of war-time necessities such as alcohol, fuel, gun powder, etc., has further emphasized its immeasureable value.

Because of its vital need in our daily diet, sugar, down through the centuries, has changed from its ancient classification as a luxury, to that of a necessity, available in sufficient quantities and at prices that are within the reach of most of us and for most of us to enjoy.

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# Sugar Quota Rise Asked By Big Users

*Reprint From Journal of Commerce, July* 29, 1949

The nation's bakers, soft-drink, candy and ice cream makers and other industrial users are pressing the Department to allow more sugar to be sold on the market.

In a letter to Secretary of Agriculture Brannan, spokesmen for these groups asserted present quota limitations on sugar sales by producers threaten a possible shortage. They said that sugar substitution during the first six months of this year indicated Americans are consuming this food at the rate of 7,643,254 tons for the year. This quantity is about 393,000 tons more than producers will be allowed to sell under domestic marketing and import quotas set for the year by Brannan. The Secretary acted under provisions of sugar control legislation designed to stabilize supplies and prices in the interest of both producers and consumers.

No comment was available from the Secretary, but the Department sugar experts said there is little basis for assuming—as did the industrial users—that virtually all the sugar distributed during the first half of this year went into consumption. Some of it, these officials said, undoubtedly has gone into inventories. The Department will obtain reports on inventories which should give some indication as to how much sugar actually is being consumed.

---

Next year will mark the 450th anniversary of the first sugar mill in the Western Hemisphere, set up at Yaguata, in the Dominican Republic, in 1509, 16 years after Columbus planted the first cane during his second voyage in 1493.

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# THE SUGAR BULLETIN

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ol. 27 NEW ORLEAN, LA., SEPTEMBER 15, 1949 No. 24

Announcing The

## TWENTY-SEVENTH ANNUAL MEETING

of the

## AMERICAN SUGAR CANE LEAGUE

of the

## U. S. A., Inc.

**THURSDAY, SEPTEMBER 29th, 1949**

JACKSON ROOM, ST. CHARLES HOTEL

New Orleans, La.

Meeting Convenes at 1:30 P. M.

At this meeting there will be an election of Officers and Members of the Executive Committee to serve during the ensuing year.

**All Members of the League Will Please Consider This as an Official Notice To Attend**

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THE
# SUGAR BULLETIN

**414 Whitney Bldg., New Orleans 12**

MARCEL J. VOORHIES, Editor

**The Official Organ of the American Sugar Cane League of the U. S. A.**

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# IN WASHINGTON WITH C. J. BOURG

The amendments to the Fair Labor Standards Act have apparently run the gauntlet of Congressional action to date. Early in this Session, the House had become involved in a great fight over these amendments, and at one time the whole subject matter was re-committed to the House Labor Committee.

A coalition has been formed in the House chiefly composed of Northern Republicans and Southern Democrats. They had succeeded in maintaining a solid front to the extent of keeping a whole series of amendments by which different industries in the country were exempt from the provisions of the Fair Labor Standards Act. Recently, to the surprise of many, this legislation was brought out on the floor again, and we had confidence in the strength of the coalition and believed that the Lucas bill would prevail. This bill originally had provided for a 65¢ minimum wage rate and a great many more exemptions in addition to all of those which are presently in the law. Much to our surprise, there was considerable internal discussion and Congressman Lucas of Texas decided to amend his bill by adding a 75¢ minimum rate, which passed the House readily. When the matter came to the Senate, the expectation of the formation of some coalition there did not materialize. Senator Ellender fought as hard as he ever had before, but for reasons best known to themselves, not all of the Southern Senators supported him and very few of the Northern Republican Senators voted in his favor.

Senator Ellender discussed at some length the conditions in the Louisiana sugar industry as follows:

"I should like now to refer to a study made by Dr. J. Norman Efferson, economist for the Louisiana Agricultural Experiment Station at Baton Rouge, Louisiana. Dr. Efferson's prepared statement may be found on Page 755 of the Senate Subcommittee's hearings on proposed amendments to the Fair Labor Standards Act. Dr. Efferson is an able and reputable economist, and, so far as I know, his conclusions have not been disrupted. He said:

> 'If the minimum wage in the Louisiana sugarcane industry is increased from 40 to 60 cents—not to 75 cents, but from 40 cents to 60 cents—the total labor costs will be increased from $100,000 per year to $135,000 per year, or a net increase of about $35,000 per mill per year, based on the 1943-47 experience.
>
> 'If the minimum is increased from 40 to 75 cents, the labor costs will be increased from an average of $100,000 per mill per year, to about $150,000, or an increase of about $50,000 per mill per year —'

"I may say in passing that during the last sugarcane grinding season in Louisiana, four of the mills

(Continued on page 406)

## MINIMUM WAGE REQUIREMENTS FOR HARVESTING 1949 LOUISIANA SUGARCANE CROP

The U. S. Department of Agriculture announced September 9 "fair and reasonable" wage rates for workers harvesting the 1949 crop of sugarcane in Louisiana, the minimum requirements which must be met by producers as one of the conditions for Government payments under the Sugar Act of 1948.

The basic wage rates remain unchanged from those in effect during the 1948 crop harvest. As in 1948, wage rates will be geared to a base price and increase or decrease with each full 10 cent change in the average price of raw sugar (duty paid basis, delivered) for a continuous two weeks' period. In the 1949 harvest the base price will be $5.60 to $6.00 per one hundred pounds of raw sugar.

Within the $5.60-$6.00 price range the basic wage rates per day vary, according to the several classes of work, from $3.50 per 9-hour day for adult male cane cutters ($3.05 for adult females) to $4.60 per 9-hour day for operators of mechanical loaders or harvesting equipment, while the piecework rates range from 85 cents per ton for cutting sugarcane to $2.18 per ton for cutting, stripping and loading sugarcane. For each full 10 cents that the average price of raw sugar is above $6.00 or below $5.60, day wage rates will increase or decrease 6½ cents per day while piecework rates will move similarly in a range of ½ cent to 4 cents per ton, depending on the type of harvest operation.

The average of raw sugar prices and the effective wage rates will be available to producers and workers at the Louisiana State and Parish Offices of the Production and Marketing Administration, U. S. Department of Agriculture. It will be the responsibility of each producer to ascertain the average price of sugar and the effective wage rates in order to pay not less than the required rates.

In addition to the wage payments to day and piecework employees, producers are required to furnish these workers, without charge, a habitable house, medical attention and similar perquisites as are customarily supplied.

## PRORATION OF DEFICIT IN HAWAIIAN SUGAR QUOTA AND REVISION OF PUERTO RICAN ALLOTMENTS

The U. S. Department of Agriculture August 29 announced proration of 200,000 short tons, raw value, additional sugar quota to Puerto Rico, the United States Mainland cane sugar area, and Cuba. The quantity prorated, now to be supplied from these three production areas for marketings in the continental United States, represents a deficit in prospective marketings from Hawaii under its 1949 quota.

The 200,000 short tons are prorated as follows: Mainland cane sugar area, 25,084; Puerto Rico, 48,696; and Cuba, 126,220. The adjusted quotas for marketings in the continental United States from the three areas participating in the proration are as follows:

| | |
|---|---|
| Mainland cane sugar | 525,084 |
| Puerto Rico | 1,019,331 |
| Cuba | 2,642,135 |

# GEORGE L. BILLEAUD HEADS NEW SUGAR EXCHANGE

The Cane Products Trade Association, Inc., and the Louisiana Sugar and Rice Exchange, have been consolidated into a one sugar exchange to serve the Louisiana sugar industry.

George L. Billeaud, President of the Cane Products Trade Association, Inc., and Chas. A. Levy, President of the Louisiana Sugar and Rice Exchange, announced the consolidation of the two organizations after a joint meeting held in New Orleans on September 6th. The name of the consolidated exchange is the Louisiana Sugar Exchange, Inc.

Commenting on the new organization Mr. Billeaud said that he was very gratified to be able to report the consolidation as an accomplished fact. "I have desired this consolidation for some twelve or fifteen years", Mr. Billeaud said, "and am very glad that it has come to pass. Let us all remember that in unity there is strength."

The officers of the new exchange elected at the meeting are George L. Billeaud, of Broussard, La., President; Chas. A. Levy, New Orleans, 1st Vice-President; Ernest A. Burguieres of New Orleans and Louisa, La., 2nd Vice President; Louis A. Robichaux, New Orleans, 3rd Vice-President; Lewis A. Scherck, New Orleans, Secretary; and Guy Maspero, New Orleans, Treasurer.

Andrew W. Dykers, of New Orleans, was elected Executive-Secretary of the new organization.

The Board of Directors are T. M. Barker, of Lockport, Mr. Billeaud, Mr. Burguieres, W. S. Chadwick, Bayou Goula, Thomas Douglas, New Orleans, Chas. A. Farwell, New Orleans, Edmond J. Garland, New Orleans, F. A. Graugnard, Jr., St. James, Harry S. Hardin, New Orleans, John Keen, New Orleans, Louis LeBourgeois, New Orleans, Irving Legendre, Thibodaux, Mr. Levy, Sam H. Livaudais, New Orleans, Mr. Maspero, J. J. Munson, Houma, Stephen C. Munson, Jeanerette, Edgar Murray, New Orleans, C. W. Peterman, New Orleans, Michel Provosty, New Orleans, E. A. Rainold, Jr., New Orleans, Mr. Robichaux, Harold F. Saufley, New Orleans, Clarence J. Savoie, Belle Rose, Mr. Scherck, and Walter A. Sullivan, of New Orleans.

The headquarters of the new exchange is 415 Whitney Building, New Orleans, La.

# DEFINITION OF MARKETING

TITLE 7—AGRICULTURE
Chapter VIII—Production and Marketing Administration (Sugar Branch). (General Sugar Reg., Amdt. 1 to Series 3, No. 2)
Part 801—General Sugar Regulations
Subpart D—Marketing of Sugar

§801.81 *Definition of Marketing*

(a) A marketing of sugar shall be deemed to have occurred when delivery of the sugar is made against a bona fide sales contract.

(b) The following shall be deemed to constitute a delivery:

(1) Actual delivery of the sugar by the seller, or by the warehouseman or custodian, (i) to the buyer, or (ii) to a common carrier for transportation to the buyer, whether or not such transportation involves subsequent transshipment by means of another such carrier.

(2) Constructive delivery of the sugar by the seller, or by the warehouseman or custodian, by (i) delivery to the buyer of a negotiable or non-negotiable warehouse receipt, or custodian's storage receipt, repre-

(Continued on page 405)

# THE IMPORTANCE OF THE PURITY OF NORMAL JUICE IN THE MANUFACTURE OF SUGAR IN LOUISIANA

*By* ROBERT H. LITTELL

*Presented at the Meeting of the Manufacturing Section, Houma, La., June* 22, 1949.

One of the most important quality factors that determines the successful, or non-successful, operation of a sugar factory is the purity of the material being processed. It is the basis of control of the manufacture of sugar throughout each station in the factory from the mills to the filling of the bags with the finished product.

The expression purity of a sugar product is defined as the percentage of sucrose (Pol) in the solids or Brix. In this study the term "Purity" is used for the apparent purity", and all further remarks will be confined to this term and that of the purity of normal juice.

In the manufacture of sugar with juices containing purities that are concomitant with their respective sucroses, in contrast to those that are not, we can expect the following results, (1) better clarification, (2) less lime required, (3) more rapid pan centrifugal work, (4) reduction of low grade massecuites, (5) less inversion of sucrose, (6) maintenance of factory capacity, (7) lower fuel, and (8) less fouling of heating and evaporating equipment. There is no doubt, also, that the moral of the personnel in the factory is affected whenever the purity of the material being processed is normal, because when satisfactory work is done the men are contented. And when poor material is being worked, dissatisfaction and lack of interest prevail amongst the personnel.

As the prities that are comparable with the sucrose in the normal juice do not present a problem as that of the sub-normal or low purities do, it should be appropriate to note in passing some of the contributory causes of low purity juices of sugar cane in Louisiana.

1. Staleness of cane.
2. Harvesting of immature tops of cane.
3. Immature cane.
4. Frozen cane.

Though it is not within the sphere of this discussion to elaborate on what remedial measures that would be required to prevent, or minimize, these causes of low purity juice, we must admit that Nos. 1 and 2 can be controlled and practically eliminated with proper supervision. In regards to No. 3, immature cane, though the availability of sugar is lower, it has been observed that low purity juices from fresh immature cane is not as difficult to process as that of low purity juices emanating from cane that previously possessed a higher jurity juice. The drop in the purity of juice from frozen cane can be retarded by the lowering of the knives as the upper joints of the cane deteriorate.

What is of paramount interest to the processor is the effect of purity on the various sucroses. It would be advisable at this point to familiarize ourselves with the information contained in Tables Nos. 1, 2, 3, and 4.

In Table No. 1 are the corresponding sucroses and purities that were used as the basis from which the A. A. A. "Commercially Recoverable Sugar Determination for Louisiana Sugar Cane" was computed in 1938. This may be called the "Yardstick" of the normal purity for the various sucroses. During the past season there was one sugar factory whose seasonable average of normal juice was Sucrose 12.12 percent and puri-

ty 73.44 percent. The purity should have been 77.2 percent, a difference of 3.76 percent, for a sucrose of 12.12 percent. In pounds of raw sugar this difference amounts to approximately four pounds of raw sugar per ton of cane. In terms of dollars at the existing price of raw sugar on a 100,000 ton crop this loss would amount to over $22,000.00. Added to this tangible figure, which can be expressed in terms of dollars, is the loss of capacity with its subsequent increase in operating cost, when processing juice of low purity. Any decrease in factory capacity prolongs the harvesting season thereby increasing the hazard of a freeze.

TABLE No. 1 SHOWING: Purities of Normal Juice Normally Expected at Various Levels of Normal Juice % Sucrose

NORMAL JUICES

| Column 1 % Sucrose | Column 2 Expected Purity |
|---|---|
| 9.5 | 68 |
| 10.0 | 71 |
| 10.5 | 74 |
| 11.0 | 75 |
| 11.5 | 76 |
| 12.0 | 77 |
| 12.5 | 78 |
| 13.0 | 79 |
| 13.5 | 80 |
| 14.0 | 81 |
| 14.5 | 82 |
| 15.0 | 83 |
| 15.5 | 84 |
| 16.0 | 85 |
| 16.5 | 86 |
| 17.0 | 87 |
| 17.5 | 88 |
| 18.0 | 89 |
| 18.5 | 90 |

SOURCE: The above relationship was established by comparison, crops 1935, 1936, and 1937, and was used as the basis from which to compute the A. A. A., "Commercially Recoverable Sugar Determination for Louisiana Sugar Cane", dated April 26, 1938.

In Table No. 2 are the values of the Winter and Carp Formula of purity ranges from 68 to 90 percent. These values show the percentage of total sucrose in juices of various purities theoretically recoverable in sugar with a Boiling House Efficiency of 100.00 percent. The effect of purity on the availability of sugar of the juice is obvious.

Table No. 3 shows the comparison of actual purities and expected purities experienced in Louisiana Sugar Factories during the past twelve

TABLE No. 2 SHOWING: Values of the Factor 1.4 – (40.0 divided by purity) X 100 for Coefficients of Purity Ranging from 68 to 90

| Column 1 Purity | Column 2 Factor |
|---|---|
| 68 | 81.12 |
| 69 | 82.03 |
| 70 | 82.86 |
| 71 | 83.66 |
| 72 | 84.45 |
| 73 | 85.21 |
| 74 | 85.96 |
| 75 | 86.67 |
| 76 | 87.37 |
| 77 | 88.05 |
| 78 | 88.72 |
| 79 | 89.37 |
| 80 | 90.00 |
| 81 | 90.62 |
| 82 | 91.22 |
| 83 | 91.81 |
| 84 | 92.38 |
| 85 | 92.94 |
| 86 | 93.49 |
| 87 | 94.02 |
| 88 | 94.55 |
| 89 | 95.06 |
| 90 | 95.56 |

years. It is important to note during the past six seasons the decrease in the actual purity with that of the expected purity. This difference of purity accounts for the reduction of yield of approximately two pounds of sugar per ton of cane on a calculated basis. However, we know with the attendant lower Boiling House Efficiency in processing low purity juices the loss is greater. This decrease in purity of the past six

TABLE No. 3 SHOWING: Average of All Louisiana Factories Each Year, 1937 through 1948 for the Following Items:

| Column 1 Crop Year | Column 2 Normal Juices % Sucrose | Column 3 Actual Purity | Column 4 Expected Purity | |
|---|---|---|---|---|
| 1937 | 11.76 | 76.26 | 76.52 | |
| 1938 | 12.50 | 77.40 | 78.00 | |
| 1939 | 12.63 | 75.53 | 78.26 | |
| 1940 | 11.93 | 77.62 | 76.86 | |
| 1941 | 12.14 | 76.69 | 77.28 | |
| 1942 | 12.70 | 77.63 | 78.40 | |
| 1943 | 12.39 | 76.10 | 77.78 | |
| 1944 | 11.93 | 75.03 | 76.86 | |
| 1945 | 11.86 | 75.25 | 76.72 | |
| 1946 | 12.31 | 76.74 | 77.62 | |
| 1947 | 12.33 | 76.49 | 77.66 | |
| 1948 | 11.91 | 75.14 | 76.82 | |
| | | | | Difference in 96 sugar |
| Simple average, 1937 thru 1942 | 12.28 | 76.86 | 77.55 | .85 lb. |
| Simple average, 1943 thru 1948 | 12.12 | 75.79 | 77.24 | 1.80 lb. |

SOURCE: Columns 1, 2, and 3 Ref. No. 1
Column 4 from Table No. 1.

seasons can be attributed partly to the present methods of harvesting cane and partly to the complacence of the cane purchaser in the acceptance of poor quality.

Table No. 4 explains the proced-

**PURITY**

| SUCROSE | 68.6 | 69.8 | 71.0 | 72.2 | 73.4 | 74.2 | 74.6 | 75.0 | 75.4 | 75.8 | 76.2 | 76.6 | 77.0 | 77.4 | 77.8 | 78.2 | 78.6 | 79.0 | 79.4 | 79.8 | 80.2 | 80.6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9.6 | 9.6 | | | | | | | | | | | | | | | | | | | | | |
| 9.8 | | 9.8 | | | | | | | | | | | | | | | | | | | | |
| 10.0 | 9.86 | 9.93 | 10.0 | 10.07 | 10.14 | 10.18 | 10.20 | 10.23 | 10.25 | 10.27 | 10.29 | 10.31 | 10.33 | 10.35 | 10.37 | 10.39 | 10.41 | 10.43 | 10.45 | 10.47 | 10.49 | 10.51 |
| 10.2 | | | | 10.2 | | | | | | | | | | | | | | | | | | |
| 10.4 | | | | | 10.4 | | | | | | | | | | | | | | | | | |
| 10.6 | | | | | | 10.6 | | | | | | | | | | | | | | | | |
| 10.8 | | | | | | | 10.8 | | | | | | | | | | | | | | | |
| 11.0 | 10.47 | 10.57 | 10.67 | 10.78 | 10.87 | 10.94 | 10.97 | 11.0 | 11.03 | 11.06 | 11.09 | 11.12 | 11.15 | 11.17 | 11.21 | 11.23 | 11.26 | 11.28 | 11.30 | 11.34 | 11.37 | 11.39 |
| 11.2 | | | | | | | | | 11.2 | | | | | | | | | | | | | |
| 11.4 | | | | | | | | | | 11.4 | | | | | | | | | | | | |
| 11.6 | | | | | | | | | | | 11.6 | | | | | | | | | | | |
| 11.8 | | | | | | | | | | | | 11.8 | | | | | | | | | | |
| 12.0 | 11.26 | 11.38 | 11.49 | 11.60 | 11.70 | 11.78 | 11.80 | 11.84 | 11.87 | 11.90 | 11.94 | 11.97 | 12.0 | 12.03 | 12.06 | 12.09 | 12.12 | 12.15 | 12.18 | 12.21 | 12.24 | 12.27 |
| 12.2 | | | | | | | | | | | | | | 12.2 | | | | | | | | |
| 12.4 | | | | | | | | | | | | | | | 12.4 | | | | | | | |
| 12.6 | | | | | | | | | | | | | | | | 12.6 | | | | | | |
| 12.8 | | | | | | | | | | | | | | | | | 12.8 | | | | | |
| 13.0 | 12.05 | 12.18 | 12.30 | 12.42 | 12.53 | 12.60 | 12.63 | 12.67 | 12.71 | 12.74 | 12.78 | 12.81 | 12.84 | 12.88 | 12.91 | 12.94 | 12.97 | 13.0 | 13.03 | 13.06 | 13.09 | 13.13 |
| | 68.6 | 69.8 | 71.0 | 72.0 | 73.4 | 74.2 | 74.6 | 75.0 | 75.4 | 75.8 | 76.2 | 76.6 | 77.0 | 77.4 | 77.8 | 78.2 | 78.6 | 79.0 | 79.4 | 79.8 | 80.2 | 80.6 |

ure in which the attached chart was formulated. This chart correlates the sucroses that correspond to various purities of a given sucrose on a yield basis. In the calculation of the available sugar per ton of cane a Normal Juice Extraction of 73.66% and a Boiling House Efficiency of 98.00 percent were used, as it was found that with these figures the results checked closely with those of the "Commercially Recoverable Sugar, Raw Value, per ton of Sugar Cane" table of 1948, with the exception of yields from purities below 75.0%. Below that level there were slight discrepancies, which were negligible. However, the purpose of the chart is to present a method whereby corrected sucroses from abnormal purities can be readily determined.

TABLE No. 4 SHOWING: The Corresponding Sucroses to Various Purities of a Given Sucrose on a Yield Basis

| Column 1 Normal Juice Sucrose | Column 2 Normal Juice Purity | Column 3 Pounds 96 Sugar per Ton of Cane | Column 4 No. 96 Sugar/TC Loss or Gain from Standard | Column 5 Corresponding Sucrose on Yield Basis |
|---|---|---|---|---|
| 12.00 | 68.6 | 147.4 | Loss: 11.5 | 11.26 |
| 12.00 | 69.8 | 149.2 | 9.7 | 11.38 |
| 12.00 | 71.0 | 151.0 | 7.9 | 11.49 |
| 12.00 | 72.2 | 152.7 | 6.2 | 11.60 |
| 12.00 | 73.4 | 154.3 | 4.6 | 11.70 |
| 12.00 | 74.2 | 155.4 | 3.5 | 11.78 |
| 12.00 | 74.6 | 155.9 | 3.0 | 11.80 |
| 12.00 | 75.0 | 156.4 | 2.5 | 11.84 |
| 12.00 | 75.4 | 156.9 | 2.0 | 11.87 |
| 12.00 | 75.8 | 157.4 | 1.5 | 11.90 |
| 12.00 | 76.2 | 157.9 | 1.0 | 11.94 |
| 12.00 | 76.6 | 158.4 | 0.5 | 11.97 |
| 12.00 | 77.0 | 158.9 | 0.0 | 12.00 |
| 12.00 | 77.4 | 159.4 | Gain: 0.5 | 12.03 |
| 12.00 | 77.8 | 159.9 | 1.0 | 12.06 |
| 12.00 | 78.2 | 160.3 | 1.4 | 12.09 |
| 12.00 | 78.6 | 160.8 | 1.9 | 12.12 |
| 12.00 | 79.0 | 161.3 | 2.4 | 12.15 |
| 12.00 | 79.4 | 161.8 | 2.9 | 12.18 |
| 12.00 | 79.8 | 162.2 | 3.3 | 12.21 |

NOTE: In the calculation of the available sugar per ton of cane a Normal Juice Extraction of 73.66% and a Boiling House Efficiency of 98.00 were used.

REF: No. 1—P.M.A. "Recapitulation of Final Manufacturing Reports of Louisiana Sugar Cane Factories."

In conclusion, with the decline in prices of sugar and molasses it is very essential that every effort should be made to assure the processing of juice from cane with a normal purity. This will be one step towards aiding the raw sugar factory to operate on a profitable basis and attaining economic security.

# PRESENT-DAY TRACTOR FUELS

*By* ROLAND TOUPS, *South Coast Corporation*

*Presented at the Meeting of the Agricultural Section, Houma, La., June* 22, 1949

The rapid decline in sugar yields along with the drop in sugar and molasses prices during the past year has had the effect of making all sugar operators more conscious of cost of operations. One of the big costs of our agricultural operations is the cost of operation and maintenance of the farm tractor. In this paper, I will attempt to discuss one phase of that cost, and that is the fuels used by this equipment. I would like to take this opportunity to suggest that this organization make a complete study of the operation and maintenance of farm tractors and powered farm machinery with the idea of making recommendation for standardization of equipment, purchasing of repair parts, and the most efficient means of maintaining and operating this equipment. I believe that you will find a great variance of means and methods of arriving at the above with the different operators. There is only one thing that I am sure of in regard to our farm equipment, and that is: it is one of the big items of cost bothering every one at the present time.

The fuels that are presently being used in the sugar industry for tractor operations are distillate, gasoline, and liquid petroleum gas. The most common of these and the one that has been used for the longest period of time is distillate, gen-

erally known by all as tractor fuel. This type of fuel has caused us to operate our equipment in an uneconomical manner due to the fact that the tractor fuel manufacturers have purposely made same to specification to avoid the gasoline tax.

In the past couple of years, we have seen an improvement in the quality of this type of fuel—both as a result of the elimination of taxes on fuel that approach gasoline specifications and also due to competition from other fuels. The present-day tractor fuel has the following general specifications:

Gravity: 44.5
Flash at atmospheric temperature
Initial boiling point: 252° F.
Final boiling point: 511° F.
Octane number: 44

The present-day tractor, as well as the tractor delivered to you over the past years, has been equipped to burn this fuel. If you will study the operations manuals of the various tractor manufacturers you will find the following:

1. Engines equipped to burn low grade fuels, distillate, will be so marked as they are built with the combination of compression, carburetors, and manifolds for this fuel.

2. When burning low grade fuels, certain precautions are necessary to prevent excessive dilution of the lubricating oils: always select a fuel that will have a gravity of 38 to 44, end point of 525° F or less, and an octane number of 30 or more.

3. Never turn on low grade fuel until the temperature of the cooling system is near boiling point, and when operating in cold weather keep sufficient cover on the radiator front to maintain this temperature. Always turn off low grade fuel and switch to gasoline before engine is stopped so that carburetor will contain gasoline when engine is started again.

4. If low grade fuel, such as distillate or tractor fuel, is used, drain oil down to drain cock located on side of oil sump after each ten hours of operation and refill to the fuel mark on gauge rod with fresh oil. After thirty hours of operation, drain oil sump completely and refill with fresh oil.

I mention the above instances from the tractor manuals to point out that the tractor manufacturers, themselves, are fully aware of the types of fuel that you will be using when burning tractor fuel or distillate; and even with the attempt to design to meet the conditions only the best of operators pay any attention to these instructions. When we first started using this type of fuel we were paying around 6¢ per gallon for same, labor and replacement parts were of relative low cost. Today, this same fuel costs 10.4¢ per gallon tank car delivery and labor has gone up 100% and materials from 200% to 300%. These are the reasons why we now have to look into the more efficient types of fuel.

The second type of fuel that we wish to discuss is gasoline. This fuel we feel must be considered as being one of the better and more efficient fuels for our tractor equipment. The present-day regular gasoline has an Octane number between 60 and 70, but in order to properly burn this fuel your new tractor should be purchased properly equipped so as to give higher compression ratios and should have proper carburetor equipment on same; or, if it is an old unit the head and pistons must be changed and your carburetor properly adjusted.

It is estimated that the piston and head change-over will cost in the neighborhood of $100.00 installed. If this change is not made you will probably burn 20% to 30% more gasoline than you ordinarily should and you will not be getting the increased benefits of power increase. The tractor manufacturers and many test runs by various A. & M. colleges throughout the United

States showed HP increases of 15% to 20% using 70 octane gasoline on tractors properly fitted for burning same. This is hard to evaluate in dollars and cents, but I do not think that you will find a single operator who will not tell you this means much to him in work accomplished over a ten hour day. This additional power eliminates interruptions that add up. The other benefit of this fuel is the decrease of dilution and fouling of plugs. With gasoline, an operator with a good filter on his tractor should be able to run 150 hours without changing oils adding only necessary makeup. The main objection to gasoline as a tractor fuel, even with the elimination of the state tax, is its cost. Gasoline still costs the operator in tank car or tank truck deliveries approximately 15¢ per gallon.

The third type of fuel we wish to discuss is liquid petroleum gas. This fuel must be considered as one of the more efficient fuels. When this fuel was first used in tractors, it was made up of a certain percentage of butane and propane. The percentage of propane increasing or decreasing with the season of the year in which it was used—as the temperature dropped, a higher percentage of propane was used so as to maintain a higher vapor pressure.

This eliminated freezing of the carburetor and made the tractor easier to start. Today, propane is being used exclusively as a commercial tractor fuel. It is available in quantities sufficient to supply the need. This fuel is a natural for engine use as its specifications are ideally suited for a fuel. This fuel has octane rating of around 100, which gives unexcelled performance —smooth and without a "ping". With this high anti-knock value, engine compression pressure can be raised 10 percent to 20 percent thereby taking full advantage of the higher octane fuel with resultant increased HP output. With the changeover of head and pistons, the compression ratios in Allis-Chalmers tractor can be increased 4.5 to 1 to 5.5 to 1 and on an International MV from 4.7 to 1 to 6.87 to 1. Propane is converted from a liquid in the fuel tank to a perfectly dry gas before reaching the combustion chamber. By good carburetion, perfect mixing of the dry gas with air for uniform distribution throughout the manifold is achieved.

With the wet fuels, this uniform mixing and distribution is never attained. With more complete burning at a rate slower than the wet fuels, smoother operations are obtained because of prolonged power impulses on the power stroke and more uniform bearing pressures. Being a dry gas crank case, dilution is impossible and likewise all ill effects as thinning of lube oils, washing lube oil from the cylinder walls with resultant cylinder wear, are entirely eliminated. I have tried to give the advantages of using propane in the above, but there are problems that also must be considered. First, propane being a liquid petroleum gas, develops rather high pressures as the outside temperature increases.

This brings about a storage and handling problem. The material must be stored in vessels designed for 200# WP and must meet ASME Code for unfired pressure vessels, Par. U69. In addition, all equipment, fittings, and work must conform with the regulations of the Liquefied Petroleum Gas Commission of the State of Louisiana. I would advise anyone contemplating the use of this fuel to write for a copy of the rules and regulations as set forth by the above body. The tank and equipment must meet the same requirements.

The next matter to consider is the equipment used on the tractor: the tank, carburetor, vaporizer, economizer, fittings, etc. will cost in the neighborhood of $200 per unit. In addition to this, in order to get the

maximum results from the fuel, the sleeves and heads on your tractor should be changed and this costs $100, making the total tractor conversion for burning propane $300. The present-day base price of propane delivered tank in tank truck quantity is 5¾¢ per gallon. If you own your tank this is your fuel cost, but many operators have found it best to allow the gas company to own the tank, having a tank of the proper size to receive tank truck deliveries, in which case the tank rental would amount to 1¢ per gallon of fuel, making the fuel cost 6¾c delivered your tank ready for use in the tractor. Test runs on tractors show that you consume 10% more fuel on a gallonage basis with propane over distillate if the tractor has been converted to the higher compression recommended for this fuel; while, on tractors that have not been converted to high compression it has been found that we use as high as 30% more fuel. In our case, we have converted our tractors as they needed-re-sleeving —the thought being that our tractors would all be converted within 18 months.

I have tried to give the characteristics of the three fuels now used in tractors in our industry. This is all well and good, but what we all want to see is what savings we can make with the various fuels, if any. I have tabulated below the estimated savings when using one type of fuel over the other. These figures are based on operating a tractor in good condition 225 days a year, 10 hours a day. I fully realize that each operator's problems will differ, such as the condition of his tractors, the quality of fuel he uses, and his present situation insofar as the distribution of equipment over an area is concerned. The main thought of the tabulation is to give you an idea of the trend of cost with the various fuels.

From the above analysis, you can

**COMPARISONS OF FUEL ECONOMY ON A TRACTOR IN GOOD OPERATING CONDITION AND PROPERLY EQUIPPED TO BURN ITS TYPE OF FUEL**

| | Fuel | | |
|---|---|---|---|
| | Distillate | Gasoline | Propane |
| Number of operating days | 225 | 225 | 225 |
| Gallons of fuel per day | 20 | 20 | 22 |
| Total yearly consumption | 4,500 | 4,500 | 4,950 |
| Value of fuel per gallon, tank car or tank truck basis delivered in tractor | 11.4c | 16c | 6-3/4c |
| Lub. oil used per year, complete change 40 hours adding 1 qt. per day | 182 gals. | | |
| Lub. oil used per year, complete change 150 hours adding 1 gal. per 50 hours | | 82½ gals. | |
| Lub. oil used per year, complete change 300 hours adding 1 gal. per 50 hours | | | 64 gals. |
| Total cost of fuel per year | $513.00 | $720.00 | $334.13 |
| Total cost lub. oil per year | 109.20 | 54.45 | 42.24 |
| Cost of amortizing additional equipment at 25% per year | | 25.00 | 75.00 |
| Total cost of fuel per year per tractor | $622.20 | $799.45 | $451.37 |

see that an operator can save $170.00 per tractor, in fuel cost alone, if same is in good operating condition by using propane instead of distillate. The above does not take into consideration the savings that would be incurred in maintenance of the tractor motor by using the more efficient fuel. In fairness to gasoline I believe that any money saved in maintenance by using propane would be saved by using gasoline, but the cost of gasoline is still out of line with either distillate or propane.

In the case of South Coast, our average yearly maintenance on tractors runs around $490.00 per tractor. In comparing this figure with other large operators at a conference on tractor maintenance held at Raceland the early part of this year, this figure was confirmed. Present indications on units that were converted for a period of time show that we should be able to realize a saving in maintenance of about 20% on the above, or $98.00 per tractor. This figure added to the fuel saving shows a saving of approximately $268.00 per tractor per year. Again I wish to emphasize that each operator must look at his own situation as I have only tried to show the trend based on the present-day situation.

## DEFINITION

(Continued from page 397)

senting the sugar, or (ii acknowledgement that the sugar is held for and on behalf of the buyer.

(c) Delivery of sugar shall be evidenced as follows:

(1) *By the seller.* Actual delivery to the buyer shall be evidenced by the buyer's written receipt thereof; actual delivery to a common carrier for transportation to the buyer shall be evidenced by a copy of the bill of lading, or other shipping receipt, issued by a comomn carrier; delivery to the buyer of a negotible or non-negotiable warehouse receipt, or a custodian's storage receipt, shall be evidenced by the buyer's written receipt thereof; and an acknowledgment that the sugar is held for and on behalf of the buyer shall be evidenced by the buyer's written receipt of the notice of such acknowledgment; and

(2) *By the warehouseman or custodian.* Actual delivery to the buyer shall be evidenced by the warehouse or custodian delivery advice accompanied by a copy of the buyer's written receipt to the warehouseman or custodian; actual delivery to a common carrier for transportation to the buyer shall be evidenced by the warehouse or custodian delivery advice accompanied by a copy of the bill of lading, or other shipping receipt, issued by a common carrier; issuance to the buyer of a negotiable or non-negotiable warehouse receipt, or custodian's receipt, representing the sugar shall be evidenced by the warehouse or custodian delivery advice showing the number of such receipt and to whom issued; and any other acknowledgment that the sugar is held for and on behalf of the buyer shall be evidenced by the warehouse or custodian delivery advice accompanied by the original or a copy of the buyer's written receipt of such acknowledgment.

(d) A sales contract shall be deemed to be a bonafide contract, if, in accordance with the foregoing:

(1) Actual delivery of the sugar is made under the contract during the quota year in which such contract is made;

(2) Constructive delivery of the sugar is made under the contract which permits actual delivery during the quota year in which such contract is made and actual delivery is made by January 31 of the following year;

(3) Constructive delivery of the sugar is made under the contract which permits actual delivery during the quota year in which such contract is made and the sugar is paid for in cash by January 31 of the following year; or

(4) Constructive delivery of the sugar is made under the contract which permits actual delivery during the quota year in which such contract is made and not less than 25 percent of the sugar is actually delivered, or not less than 25 percent of the purchase price of the sugar is paid in cash by January 31 of the following year: Provided, The entire amount of the sugar is actually delivered to the buyer and paid for in full.

(e) The provisions of this section shall apply to the first marketing of sugar produced from sugar beets and sugarcane grown in the continental United States.

Note: The record-keeping and reporting requirements of these regulations have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

(Sec. 211, 403; Pub. Law 388, 80th Cong.)

Done at Washington, D. C., this 26th day of February, 1948. Witness my hand and the seal of the Department of Agriculture.

Clinton P. Anderson,

(Seal) *Secretary*

## IN WASHINGTON

(Continued from page 395)

closed; they were unable to operate at a profit. I read further:

> 'therefore, an increase in the minimum wage up to 75 cents per hour indicates that annual earnings in the future will be a minus quantity, approximating a loss of $30,000 per mill per year. This will mean a prospective loss of 6 percent per year on the investment in comparison with the previous 5-year earnings of a 4 percent on the investment. These changes would occur with the increase in the minimum wage, but with all the presently existing exemptions from overtime pay for this seasonal industry still being maintained. If other adjustments are made in the overtime-pay exemptions, the losses will be even greater.'

"I might remind the Senate that the Louisiana sugarcane industry is a highly specialized one, the only other sugarcane area in the United States being in Florida. I might also remind the Senate that the world supply of sugar is very great and that there probably will be in the years ahead great difficulty in maintaining prices. Obviously, an increase in the minimum wage to 75 cents will mean the crippling, if not the destruction, of one of my State's great industries. It follows quite naturally that the ruin of this industry will be followed by the ruin of the farmers who depend upon the production of cane sugar for their livelihood.

"There is other testimony in the record of the hearings bearing on this problem and all of it points to one thing—a blow crippling and destructive to the Louisiana sugar industry, if the minimum is raised to 75 cents, and if existing exemptions are removed as is proposed in the Senate bill, which fortunately is not the case thus far. For those who are interested, I think a study of the record referred to would be very illuminating."

Senator Ellender introduced into the Senate three different amend-

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ments: one was to establish a 65c minimum wage rate and he made his principal appeal and arguments on this bill, but it failed of passage by a vote of 51 to 26. He thereupon proposed a 70¢ an hour minimum wage rate, which likewise was defeated by a vote of 51 to 25. He then offered an amendment:

"Sec. 3. (a) Section 6 (a) of such act is amended by striking out paragraphs (1), (2), (3), and and (4) and inserting in lieu thereof the following:

"(1) Not less than 65¢ cents an hour or the rate (not in excess of 75 cents an hour and not less than 55 cents an hour) prescribed in the applicable order of the Administrator issued under section 8.

"(b) Such section 6 (a) is further amended by striking out '(5)' and inserting in lieu thereof '(2)'."

This amendment was similarly defeated and it became perfectly evident that the Senate was not in a compromising mood but very strong for the 75¢ minimum wage rate.

The Lucas bill which had passed the House contains a provision whereby the new amendments to the Act becomes effective 60 days after the President signs the law. The Thomas bill which passed the Senate has the provision that the effective date of the law will be 120 days after the Presidential signature. Thus, the effective date will have to be determined by the Conference Committee which has been appointed from the Senate, but which will be appointed from the House only when that body returns later in the month.

There are some changes as to exemptions to be agreed upon also, but the exemption as to hours or overtime, which is granted to processors of sugarcane and sugar beets into sugar and syrup, has been retained in both the House and the Senate version.

Agriculture labor is exempt from all provisions of the Fair Labor Standards Act and will not be the subject of Conference agreement. It will probably not be until October before the new amendments to the Act are agreed upon by the Conference and both Houses of Congress.


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E. A. RAINOLD, INC.
456 Marine Building
New Orleans 12, La.

ESSO STANDARD OIL COMPANY
(Louisiana Division)
P. O. Box 1250 New Orleans 10, La.

STANDARD SUPPLY & HARDWARE CO., INC.
822 Tchoupitoulas St.
New Orleans, La.

STATE AGRICULTURAL CREDIT CORP., INC.
837 Whitney Building
New Orleans, La.

THORNTON GRAB & DERRICK WORKS, INC.
Jeanerette, La.

WHITNEY NATIONAL BANK
New Orleans, La.